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NATIVE HAWAIIAN ETHNOGRAPHIC STUDY FOR THE HAWAI'I GEOTHERMAL PROJECT PROPOSED FOR PUNA AND SOUTH MAUI

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Cultural Advocacy Network for Developing Options
(CANDO)

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PUNA DISTRICT COMPILATION OF INFORMATION

ETHNOGRAPHIC OVERVIEW OF SOUTHEAST MAUI

Southeast Maui

Proceeding from east to west. the proposed geothermal project on Maui directly impacts the moku (land sections) of Kaupo. Kahikinui and Honua'ula. According to current plans. the Geothermal submarine cable will surface at a land transition point along Huakini Bay, in Kaupo, just west of the primary canoe landing site at Nu'u Bay. From here. the electricity will be transmitted through overhead transmission lines. which cross mauka (mountainward) of the Pi'ilani Highway below the 200 foot elevation. At the 500 foot elevation the transmission lines will cross makai (seaward) of the Pi'ilani Highway at the 500 foot elevation. The route of the overland transmission line then parallels the island's South shore for a distance of approximately 20 miles. along the makai side of the Pi'ilani Highway at between the 500 foot and 1,800 foot elevations. The route. East to West. cuts along the scenic grasslands of Kaupo|, the scenic lava outcrops of Kahikinui. cuts through the Kahikinui Cultural Management Zone of the Department of Hawaiian Home Lands. and intersects the lower Kanaio Homesteads. It is situated East of the Kipahulu Forest Reserve. makai of the Kahikinui and Honua'ula Forest Reserve (elevation above 2,600-3.700 feet) and makai of the upper Kanaio Homesteads (elevation 2.800-3.400 feet).

The overhead transmission line will connect to a the submarine cable at a land-sea transition point located on the South shore at Kanahena, 'Ahihi Bay. This is west of the Natural Area Reserve of Cape Kina'u and the traditional landing at Keone'oio or La Perouse Bay in the Honua'ula district of Maui (U.S G.S. Topographic Map 1: 24,000 provided by Oak Ridge Nat. Lab.)

The southeastern coast of Maui consists of the southeastern slope of the Haleakala crater descending from the rim at the 10,000 foot elevation, down to sea level. It is an unspoiled scenic district of forests. pastoral grassland. lava outcrops and indigenous Hawaiian plants which survive in the ravines and gulches.

On modern maps, southeast Maui is shown as being located within the large districts of Makawao and Hana (DBED&T, 1992). Older maps (Wall, 1922) broke the area into the several smaller moku (also called kalana, or okana), of Honua'ula, Kahikinui, Kaupo, Kipahulu and Hana (Handy, Handy and Pukui, 1972: 510). One source discusses the history of land divisions throughout the islands and notes that the Maui land designations lack "the simplicity observed in othe other islands" (King 1935). However. an experienced surveyor, Robert King identified these land sections, as districts. Curtis J. Lyons. writing in 1876 noted the following:

On East Maui, the division [of land] in its general principles was much the same as on Hawaii, save that the radial system was better adhered to. The fact there is pointed out, to this day, on the sharp spur projecting into the east side of Haleakala crater, a rock called the "Pohaku oki aina," --land-dividing rock, to which the larger lands came as a centre. How many lands actually came up to this is not yet known (Lyons, 1875:111).

Within the districts of Honua'ula, Kahikinui, and Kaupo, are located smaller land divisions, or ahupua'a These sub-district land divisions usually extended from the sea to the uplands. Some extended inland only as far as the forest. Others swept up to the top of the mountain. A few went into the crater to meet ahupua'a from other districts at the piko (umbilical) stone, Pohaku Palaha, on the northern rim of Haleakala crater. The following is a list of the impacted moku and the ahupua'a within each district which will be impacted.

Honua'ula
Paeahu, Palauea, Keauhou, Kalihi, Waipao Papa'anui, Kaeo, Maluaka, Mo'oiki (fronting Molokini islet), Mo'oloa, Mo'omuku, Onau, Kanahena (sealand geothermal transition point at 'Ahihi Bay), Kualapa, Kalihi, Papaka-kai, Kaunauhane, Kaloi, and Kanaio (Kanaio Homesteads)

Kahikinui Land Section
Auwahi, Alena (Luala'ilua Hills), Kipapa, Nakaohu (Kahikinui House, Ka 'Ohana o Kahikinui), Naka'aha, Mahamenui, and Manawainui.

Kaupo Land Section
Waiopai, Nakula (sealand transition point at Huakini Bay), Nu'u, and Naholoku Pu'umaneoneo, Kou, Pauku, Puka'auhuhu, Hiki'aupea, Kaumahalua, Kaki'o, Poho'ula, Kepio, Niumalu, Pu'ulani (Kaupo Homesteads), Kahuai (Kaupo Homesteads), Ma'alo (Kaupo Homesteads), and Kalepa. (USGS 1993).

In an older map, the land section of Kaupo included the additional land subsection of Waiopai, between Manawainui and Nakula (Wall 1922). It is said that the Honua'ula district once extended from Keawakapu (Forbidden Harbor) at Wailea to Nu'u and inland all the way to the summit of Mauna Haleakala. However, the Hawai'i Territory Survey Map (Wall 1929) defines the Honua'ula land division to extend from Paeahu to Kanaio and the Kahikinui land division to extend from Auwahi to Manawainui.

The area from Kaupo through Honua'ula is rural, and is enjoyed by the local people of Maui as a pristine, visually unspoiled and gentle sloping landscape. There is an unobstructed panoramic view of the southern slopes of the Haleakala crater, the island of Kaho'olawe and the Big Island. This area, which has been impacted only by lava flows and grazing cattle and goats, is characterized by Hawaiian informants as a remote place where Hawaiians can reconnect with another time and their cultural roots. In this

part of Maui, from Nu'u to Kanaio, they engage in subsistence activities, such as hunting and fishing, using the moon, the sun, the stars, the tides, the weather and the seasons to guide them. Here they feel in contact with nature, physically and spiritually.

It is an area where individuals and families from the urban centers of Maui can go for recreation. Huakini Bay and Nu'u Landing are regularly frequented by weekend campers. During the summer, families camp there for weeks at a time. Here they feel a degree of self-reliance and independence. Several Hawaiian 'ohana (extended families) have managed to hold on to their traditional kuleana lands at Kanaio. Family members who have continued to live on the land are now building new homes for their children and grandchildren. At Kahikinui, where a longterm ranching lease has just expired, Native Hawaiians who have been on the waiting list for homestead and pastoral leases for years, anticipate being able to settle on the Department of Hawaiian Home Lands in the near future.

Wahi Pana (Sacred Places) Of Southeast Maui

The coastline of this section of Maui, much like Kaho'olawe, is windswept and relatively barren. Most of the mo'olelo (oral tradition) for southeast Maui date back to the era of the great migration from Tahiti and the long voyages between Hawai'i and Tahiti. In this, the mo'olelo of Kaupo, Kahikinui, and Honua'ula are also intertwined with that of the island of Kaho'olawe, which was originally dedicated to Kanaloa, the great Polynesian god of the ocean and of seafaring, and its Kealaikahiki Channel (pathway to Tahiti). Thus, the wahi pana or sacred storied places of southeast Maui reveal a history of the settlement of the islands of Hawai'i by the high chiefs of Tahiti as they were guided to Hawai'i by their great navigtors.

Nu'u means the high place, or second platform in a temple. It is a place of sacredness and it is a village site. The bay was so named because it was the landing place of Nu'u, a great kahuna navigator who was an ancestor twelve generations from the beginning of the race in the genealogy of Kumuhonua. (Beckwith, 1970:314) Kaupo means landing by canoe in the night. The name attests that the area was a noted landing for South-East Maui, particularly the bay of Nu'u.

Honua'ula means red earth. The sacred red color was restricted to the chiefly and priestly classes. Honua'ula was liked by the ali'i (chiefs) for its productive soil, climate and views. It was a sacred land of the ali'i.

It is reported that Kahikinui was named for the beloved homeland, Kahiki, of the first settlers who came to Maui from the South. (Ke Au Hou December 14, 1910 in Handy, Handy and Pukui, 1972: 508). Luala'ilua Hills, in Kahikinui means the place of double enjoyment, resting place for peace. Most of the Hawaiians in the Hana districts are said to trace their ancestry to Hawaiians who lived in Kaupo and Kahikinui before Cook's arrival.

The Mythical Era Of South-East Maui

The legends associated with the places of South and East Maui help explain in a symbolic and poetic way how the basic elemental forces of nature shaped the landscape of the remote district and how humans adjusted to those elemental forces. The activities of Maui, the demigod, in southeast Maui metaphorically explain the gradual quest o humans to understand the mysterious essence of the elemental life forces of nature in order to improve the condition of their life in the islands. The beauty of the stories and the poetry of Hawaiian legends and chants associated with the study area must be taken into account, even if they do not appear in the abbreviated narratives contained in thi EIS document.

The ocean along the shoreline in southeast Maui has abundant marine life and is a source of sustenance for many people. Fresh water seeps into the ocean at the shore and creates a productive ecosystem for a large array of sea life. The gods Kane and Kanaloa are credited with going about all of the islands to establish springs of fresh water. Kane and Kanaloa are also attributed with providing springs of fresh water springs along the southeast coast of Maui. It is said that they landed at Pu'u-o-Kanaloa (Hill-of-Kanaloa) a small hill just north of Keone'o'io when they first came from Kahiki. They dug a water hole by the beach and found the water brackish. So they went about 200 yards inland and dug another hole and created the spring called Ka-wai-a-ka-la'o. These gods also opened the Kanaloa fishpond at Luala'ilua-kai providing the brackish water that the need for spawning. (Beckwith, 1970: 64). From here, they went on to Nu'u and dug another spring there (Handy, 1972, 510).

Maui is the Hawaiian demi-god attributed with fishing the islands of Hawai'i up from the ocean, slowing the sun to make the days longer during the summer months, lifting the sky, and discovering the secret of how to make fire. He set out to accomplish his great feats from Kaupo, the district in which he lived with his mother Hina. It was in Kaupo, above the Ko'olau Gap, that Maui was able to snare the sun and force it to make a commitment to slow down during the summer months (Walker, 1931: 34-35; Beckwith, 1970: 229).

Maui fishes up the islands of Hawai'i when he goes fishing with his brothers in the fishing ground called Po'o directly seward rom Kiipahulu and in a line with the hill called Ka-Iwi-o-Pele near Hana. He used the magic hook Manaiakalani (Made Fast to the Heavens) and caught the big ulua of Pimoe. For two days they pull at it before it comes to the surface and is drawn close to the canoes. The brothers are warned not to look back. They do so. The cord breaks, and the fish vanishes. That is why the islands are not united into one (Beckwith, 1970: 230). Pu'u Pimoe is a remnant of the ulua fish.

Sometime in the mythical period, a particular species of wauke or mulberry plant is believed to have originated in Kaupo, according to the legend of Maikona, banished son of Konikonia and Hinaaikamalama. In the story, he wandered around and finally died at Kaupo. Out of his body grew a wauke plant (Broussonetia papyrifera) of a hairy kind like the hairy Maikona and useful for beating out bark cloth.

The practice of establishing ko'a to honor Ku'ula as patron of fishing together with his wife Hina were introduced in Hawai'i by his son A'ia'i. The Ku'ula and A'ia'i traditions related to Hawaiian fishing customs and practices originate in Hana and spread along the coast through Kipahulu and on to Kahiki'ula and to the other islands. Martha Beckwith offered the following account of the Ku'ula practice as it related to South Maui:

> The god lived as a man on earth on East Maui in the land called Alea-mai at a place called Leho-ula (Red-cowry) on the side of the hill Ka-iwi-o-Pele (The bones of Pele). There he built the first fishpond; and when he died he gave to his son Aiai the four magic objects with which he controlled the fish and taught him how to address the gods in prayer and how to set up fish altars. . . . His son Aiai, following his instructions, traveled about the island establishing fishing stations (ko'a) at fishing grounds (ko'a aina) where fish were accustomed to feed and setting up altars (kuula) upon which to lay, as offerings to the fishing gods, two fish from the first catch . . . Leaving Hana, he establishes fishing stations and altars along the coast all around the island as far as Kipahulu. At the famous fishing ground (Ko'a-nui) in the sea of Maulili he meets the fisherman Kane-makua and presents him with the fish he has just caught and gives him charge of the grounds, bidding him establish the custom of giving the first fish caught to any stranger passing by canoe. Another famous station and altar is at Kahiki-ula (Beckwith, 1971).

Walker added more details to the legendary accomplishments of A'ia'i. According to him, A'ia'i raised the large stone Ku-a-lanikila at Puhele near Hamoa, and it became a ku'ula stone with the power to attract fish. The first ko'a, or fishing station, was established near 'Aleamai South-East of 'Alau Island a few miles out at sea. The second was so far out that can be located only by taking bearings from points ashore. A'ia'i taught people how to make nets and lines and showed them how the giant octopus could be caught by mean of the cowry shell. He then moved to Kipahulu, Kaupo, Kahikinui and so on around the island establishing ko'a and ku'ula everywhere. (Walker, 1931: 38-39). The Kanahena Heiau is reputed to have been built by A'ia'i in commemoration of his noted father Ku'ula-kai.

Pele and her family of the volcano fire clan lived on the southern slopes of Haleakala during Maui's mythical era. Pele made her first home on Maui in Pu'u Keka'a. When that crater was inundated by the ocean waters of her fiercest enemy, her sister Namakaokaha'i, Pele climbed Mauna Kahalawai and left her footprint there as Pu'u Laina (Ashdown, 1963-1977).

When the goddess Pele moved to Haleakala, the mountain enlarged it to its present size. Again, Namakaokaha'i found her. A great fight ensued in which the physical body of Pele was killed and her bones were scattered along the South and East coast of Maui at places known as Na-iwi-o-Pele (the bones of Pele) (Walker, 1931: 37). In her apotheosis, the spirit of Pele lived on in the more powerful form as a deity who could take on many physical body forms and she and her family moved on to Hawai'i island and settled in the Puna district.

About two centuries ago, Pele visited Maui and completed her Lalanipu'u, or row of foot hills in Honua'ula - Pu'u Naio, Pu'u Kalu 'Ola'a, Pu'u Lua Palani and Pu'u Pimoe. In 1736, Pele was still at Pimoe and she helped to herald the birth of

Kamehameha the Great . Although Haleakala remains dormant. there is still a lot of seismic activity from Pu'u Pimoe and over to Pu'u Ola'i. Earthquake hill. at Ku-Makena.

The latest eruptions of Haleakala run down the Southwestern corner of East Maui. One story explains that this eruption was due to a family who incurred Pele's wrath. The goddess swept down and consumed them and their whole village (Walker. 1931). The Pa'ea flow from 'Olapa and Palani is linked to one of the love affairs of the volcanic goddess. Pele fell in love with a married man who remained true to his wife rather than giving in to Pele's advances. Angered. Pele raged down from Palani. caught the man and turned him into a stone near Pu'u Mahoe at Ana Muki, the Twin Hills, just below the cave called Ke Kua Muki (Whispering of God). A lava stone there resembles a man's head and shoulders and it is shaped like a map of Maui. It is called Po'o Kanaka or Man's head stone. The lower part of the man's body is Pohaku Pa'ea in the sea of Keone'o'io at Ku-Makena. The 'Olapa hill is the wife.

The Wai'ola Flow begins with a kind woman named Wai'ola, or water of life. There was a drought and the people of Kahikinui were hoarding the water. An old woman came and the people laughed and told her she was old, and that it was time for her to die. Only Wai'ola, the kind one, gave her last ipu wai, her water gourd to the old woman who drank the water. Later, lava rolled over the people, leaving only Wai'ola's land and home safe. Then a big dog came. Wai'ola followed him to a beautiful pool of water, sparkling in the sunshine with kalo (taro), hala (Pandanus odoratissimus), mai'a (banana) and other fine plants. Wai'ola gave thanks, drank, andthen she realized that the dog was Poli, the black dog of Pele. She named the water Wai-a-ka-'Ilio, the Water of the Dog, in thanksgiving to Pele. There are now three springs in the lava flow named water of the dog. One of them is pumping water to the old Kahikinui House.

At Pu'u Ola'i, Earthquake Hill, Pele was jealous of the Mo'o Maiden of Kaho'olawe, Inaina, whose parents where Hele and Kali. Pele accused Inaina of trying to steal Lohi'au from her. In a fit of anger, Pele transformed the three into hills named after them. Kamohoali'i scolded her and pronounced the Kanawai Inaina there, meaning you must not say or do unkind things to others. From that time the people of Honua'ula observed that law. They named the area as Ku-Makena meaning you stand courageously, accepting the joys and sorrows of life bravely, even while mourning or rejoicing.

In another legend, Pele and Hiiaka journeyed to Haleakala from Molokai'i. Upon their arrival at this place they began digging a pit which they left open on the top of the mountain. The rocks at Hanakaieie, at Kahikinui, are those that were dug up by Pele and Hi'iaka. These are a noted cluster of rocks in an a'a rubble lava in the uplands (Sterling, 1966).

Earliest Settlement 0 and 600 A.D.

Hawaiian cultural sites said to be built by the Menehune were structures and features constructed by the original settlers of Hawai'i prior to the Tahitian migration in 1200 - 1250. Loaloa is a very ancient heiau that was built by the Menehune in the Manawainui ahupua'a to honor the ancient gods. It is the longest heiau on Maui.

Apparently, this southeastern section of Maui, which is less hospitable than the windward districts of the island, was settled as the population gradually expanded and eventually moved into the leeward districts.

Continued Settlement And Gradual Expansion 600 and 1100 A.D.

Throughout southeast Maui, the Hawaiians lived along the coast where the offshore ocean was abundant with marine resources and fresh water percolated out along the rocky shore or in springs in shallow bays. At the higher elevations, where the clouds daily cling to the slopes of Haleakala, the mountain forests are lush with native vegetation. In the uplands, just below the forest zone, the soil was excellent for dryland taro, sweet potatoes, medicinal plants, wauke trees for tapa making, all sorts of forest trees including mamane, kamani, koa, and other indigenous growth (Ashdown, 1969; Ashdown, 1977).

In dry areas the wiliwili and nene-leau trees provided light weight wood for canoe outriggers and poles for buildings. The pretty red seeds were used for making lei. The hau trees along the beach provided timber and bast for making cord, rope and certain hula skirts. Koa trees form the upper forest, and kukui trees in forest and villages such as Nahawale and Moanakala, provided hard wood, lighter wood, dyes, medicine, cordage and oil for lamps and polishing. The hala and halapepe used for matting (moena) and other purposes are gone and few remain in the upper forest today. The 'auhuhu plant was pounded and mixed with chewed bait to stun fish so that they could be taken by hand.

Hawaiian mauka-makai use of the ahupua'a in southeast Maui was linked to the planting cycle which was dependent upon the variations in rainfall according to elevation and seasons. In the uplands, where it usually rained daily, planting could be done year round. In the lowlands, planting was usually done in conjunction with the rainy season. When the rains moved on to the lowlands, each family cultivated plants at temporary habitation sites along the coast. This important seasonal cycle is documented in the interviews with Sam Po. According to him, even up through the latter half of the 19th century the Hawaiians in the district continued to live mauka or makai and plant in accordance with the annual rains. About one month before the rainy season began, they would carry dirt down from the mountains to the coast in lauhala baskets and fill holes in the lava in preparation for planting. Children also helped to carry some dirt in lauhala

bags. While on the coast, the Hawaiians would subsist on fishing and various cucurbits which were cultivated in the pockest of lava and nurtured by the rain. When the vegetables matured (Hawaiian watermelon. Ipu olo. Ipu nunou-iani. pumpkin. and Poha or Ipu 'ala), they were consumed. After a period of about six months. just when the climate became dry, the families would make the return journey to their upland habitation sites (Sam Po in Chapman July 5, 1966: 4).

The ocean along the entire district from Ko'olau to Kaupo provided Hawaiians with various sources of food including numerous varieties of fish. crab. shellfish. and seaweed. They would gather shellfish and limu along the shore: go deep fishing in canoes: lay nets. including the large hukilau nets in the bays; dive: line fish: cultivate fish in ponds. and develop fishing grounds by feeding the fish at ko'a or designated spots in the open ocean.

Salt for the Hana district was gathered at Nu'u. where there were keheka (natural hollows) in the rocks in which salt (pa'a-kai) accumulated when the shallow ponds formed during rough seas and dried up in the sun. People would travel to Nu'u in the summertime to gather salt. Nu'ualo'a. in Kaupo, had several veins of 'alae. the red earthen mineral that is rich with iron. The Hawaiians commonly ground their salt together with alae to enrich it with iron (Several testimonies in McGregor, December 1989).

Fishing and ocean gathering was based on observation of moon phases and stars. When the stars where numerous and bright that was the time to go and look for the shellfish such as Kupe'e (Nerita polita) which usually hide during the day. This gathering was done in the utmost silence, lest the shellfish drop and burrow to hide themselves. Salt was gathered in the summer from the hollow stones along the shore. Families would gather an entire year's supply during the summer, dry it and store it in caves. Summer was the spawning time for the Manini. the Humuhumunukunukuapua'a. the Mullet and the Aholehole. The humuhumunukunukuapua'a could be used as subsitutes for the pig in religious ceremonies (Sam Po in Chapman July 5, 1966: 5-7).

Most of the families between Kaupo and Kipahulu areas were related to each others and exchange and sharing was common and expected. There was an Hawaiian riddle for Kaupo and Kipahulu which linked the two districts together and noted the importance of coping with famine during drought times by eating sprouting potatoes left in the old mounds to growth to maturity (McGregor, December 1989).

In the drier areas of Kaupo, Hawaiians planted sweet potatoes. pumpkins. and dry taro for home consumption. The sweet potato was the staple food for the Kaupo families. Even their poi was made out of sweet potatoes.

The Hawaiians of Kaupo obtained fresh water from numerous springs in the area such as Punahoe and Waiu. In Manawainui Valley, there were several large springs until landslides covered them up and broke the pipelines carrying water to households.

Kahikinui was arid along the coast but well-forested above the cloud line. Fishing was good along its rugged shores. Hawaiians lived in isolated communities on the broken lava, scattered from one end of the district to the other close to the sea or slightly inland, wherever potable water was found in a brackish well or a submarine spring offshore. The Hawaiians of Kahikinui developed garden holes also, but their primary cultivation area was upland, just below the forest zone and where the rainfall was plentiful. There, they developed upland plots of dry taro and other edible plants (Handy, Handy and Pukui, 1972: 508).

In Honua'ula the lower uplands, above the inhabited area and where the rains fell daily was the main cultivation zone. The eastern and coastal portion of Honua'ula was thickly populated by Hawaiian planters (Handy, 1972). The entire area of Honua'ula was highly cultivated. Handy tells of sweet potatoes from Kula to Nu'u, and in the Honua'ula area of Maui from Keawakapu to Nu'u. It is important to note that later, when lava flows covered the land, people did not move away. Instead, they dug deep holes in the lava and transported soil from the uplands to fill them up. The earth was dug up and the soil passed in baskets from hand to hand along a row of people to fill the "garden holes" in the lava. In Honua'ula, structures of all sorts can be found where such farming was done after a lava flow. Today called "footprints," there are garden holes of all sizes that can be found in the lava flows of Honua'ula, Luala'ilua, and at Pu'u-o-kali. High chief, Kiha-a-Pi'ilani is said to have planted sweet potatoes for the starving people, doing the work of eighty men in one day. Even the gulches were planted with certain types of vines suited to that type of terrain.

Migration, Ruling Chiefs And 'Ohana 1100 and 1400 A.D.

Puaneane is the hill in Kahikinui where the Santa Ynez church ruins now stand. This place is also called Pu'u Aniani. The great navigator Hawai'iloa-ke-Kiwa is said to have named this hill for his father, the great navigator Anianikalani, and the surrounding area for his homeland across the horizon, Kahiki Ku, "Tahiti over the horizon" or Kahikinui, the "Great Tahiti". Kahikinui is also the name of a navigational star, said to be named for one of the eight steermen of Hawai'iloa.

Aniani, means mirror, shining like glass, clearness, travel swiftly, named by Hawai'iloa after his father, Anianikalani, the noted navigator. Pohakea, the white stone there means fading night.

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PURPOSE AND GUIDELINES

The purpose of this geothermal development impact study was to gather information on Hawaiian ethnographic resources in the regions of Puna and South Maui, particularly traditional cultural properties, as described in and in conformance with: The National Register Bulletin #38 "Guidelines for Evaluating and Documenting Traditional Cultural Properties", and The National Register Bulletin #30 "Guidelines for Evaluating and Documenting Rural Historic Landscapes." The concept of traditional cultural properties refers to those beliefs, customs, and practices of a living community of people that are associated with natural resources and prehistoric or historic sites. These aspects of culture have been passed down through the generations, usually orally or through practice. Properties to which traditional cultural value is ascribed often take on a vital significance, so that any damage to or infringement upon them is perceived to be deeply offensive to, and even destructive of, the group that values them (National Register Bulletin #38).

This ethnographic study a is part of a larger Environmental Impact Statement (EIS) that is designed to identify and assess the potential environmental impacts of the Hawai'i Geothermal Project (HGP). The EIS is in compliance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act of 1966 (NHPA)(as amended through 1992), the American Indian Religious Freedom Act of 1978 (AIRFA), the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), and other federal and State legislation pertaining to the protection of cultural resources and Native Hawaiian rights and beliefs.

The statutory requirements and policies served to guide the study design in terms of the use of particular research methodologies, sample selection, and processes. The study was designed to identify and thoroughly assess Native Hawaiian cultural resources, particularly significant sites and traditional cultural properties, with regard to potential impacts of the HGP in the two proposed project areas. The information sought was related primarily to Native Hawaiian resources in terms of ecological (atmospheric/terrestrial/aquatic) impacts, subsistence impacts, cultural impacts, and spiritual/religious impacts.

The objectives of the study were to:

1. Describe sites and areas of cultural and historical use and significance in the Puna and South Maui areas;

2. Identify and describe the known natural and cultural resources in Puna and South Maui;

3. Describe Native Hawaiian beliefs and customs as they relate to culture, religion, and subsistence;

4. Describe and assess Native Hawaiian concerns about the potential affects of HGP on the aforementioned aspects of culture and the requisite natural resources; and

5. Develop recommendations and suggest mitigation efforts related to the proposed HGP project.

The major tasks of the study were to:

1. Conduct literature searches at the following locations: the University of Hawai'i Hamilton Library, Bernice Pauahi Bishop Museum, Lyman Museum, Volcano National Park Museum, Maui Historical Society Museum, Hawai'i Mission Children's Library, and the Hawai'i State Archives. This activity provided a foundation for ethnohistorical and ethnographic information on Native Hawaiian cultural, religious, and subsistence customs, beliefs, and practices as it related to the two project areas.

2. Review the Pele chants and the chants for South Maui to identify significant sites, wahi pana (sacred areas), and cultural and religious use areas.

3. Extract place names from historical maps found in museums and archives for interpretation by tradition bearers and practitioners. There is a broad range of meanings for many Hawaiian place names and there is extensive speculation over meanings that may have been obscured over generations. The intent of this aspect of the research was to clarify the location, geographic extent, and possible pronunciation and cultural meaning.

4. Contact Native Hawaiian 'ohana (extended family) and cultural groups that were likely to be affected by the proposed HGP and consult with them in order to develop: (a) a list of community informants, and (b) a list of cultural experts and practitioners for in-depth interviews and for focus group discussions.

Native Hawaiians with close ancestral ties and traditional knowledge of natural and cultural resources in Puna and South Maui were the primary participants in this study. However, a wide range of Native Hawaiians are involved in or seek to revive and re-establish traditional cultural, religious, and subsistence customs and practices in the two project areas. The sampling strategy involved contacting and engaging groups and individuals from the two project areas who represented the broad range of concerns and viewpoints.

Respondent Qualifications

In order to acquire information relevant to the study objectives, individuals were sought for both in-depth interviews and focus group discussions. Several terms have been used in past

ethnographic efforts to describe individuals who have been identified as experts whose knowledge is worthy of documenting for the purposes of advancing indigenous knowledge, decision-making, or policy/program development. Such terms have included: tradition bearer, kama'aina witness, kupuna, cultural informant, and practitioner. These terms are not mutually exclusive and it is difficult to make exact distinctions between the populations they are intended to represent. They refer to a broad range of individuals who may be scholars who have researched aspects of Hawaiian culture, individuals who practice traditional customs as a way of everyday life, those who possess traditional knowledge of places they may no longer visit, those who have a deep understanding of customs they no longer practice, educators and proprietors, etc. Respondents for this study included all of the above although a major emphasis was placed on identifying those persons with traditional knowledge of places, customs, and practices in the two project areas. Those who were chosen for interviews or focus groups were principal individuals who had a deep and vested knowledge of Hawaiian culture and practices.

Similar to the political developments among the Paiute tribes and bands where the Yucca Mountain Project study was conducted, Native Hawaiians are not today organized as a nation. Efforts are underway to reconstitute a government for a sovereign Native Hawaiian nation and there are many organizations who are involved at different levels in the process. In the absence of a national government, 'ohana (extended family) networks also survive as significant social organization units in rural Native Hawaiian communities.

Consultation with interested and affected Native Hawaiians was therefore approached at different levels - from the 'ohana networks in the rural areas included in the HGP to the Native Hawaiian organizations (e.g., Puna Hui 'Ohana, Pele Defense Fund, Ka 'Ohana O Kahikinui, Malama I Na Kupuna) as well as groups concerned with the broader issues relating to sovereignty, redress, and reparations (e.g., Office of Hawaiian Affairs, Ka Lahui Hawai'i).

Native Hawaiians who live closest to the project areas may have a different interest and stake in their natural and cultural resources compared to those who live at a distance. The availability of natural and cultural resources for traditional Native Hawaiian customs, beliefs, and practices are important to individuals and 'ohana as part of maintaining their subsistence livelihoods, mutual support networks, and family heritage. At the broader societal level, maintaining natural and cultural resources for traditional customs, beliefs, and practices are often viewed as being essential to the perpetuation of Native Hawaiians as a distinct and unique people. The interests are different and equally important to acknowledge.

National Register Bulletin #38 provides guidelines on how to evaluate and document traditional cultural properties which was instructive to the design of this ethnographic study. It defined culture as the traditions, beliefs, practices, lifeways, arts, crafts, and social institutions of any community, be it an Indian tribe, a local ethnic group, or the people of the nation as a whole. It noted the importance of consulting with groups and individuals who have special knowledge about and interests in the history and culture of the area to be studied. It cautioned that the interests of the contemporary sources should be carefully considered because individuals who have economic interests in the potential development of an area may be motivated to deny

its cultural significance. More subtly, individuals who regarded traditional practices and beliefs as backward and contrary to the best contemporary interests of the group that once ascribed significance to a property, may feel justified in saying that such significance has been lost, or was never ascribed to the property.

The following categories of people provided operational definitions of those who qualified as respondents for the study:

A. Members of Native Hawaiian 'ohana who lived in close proximity to the natural/cultural resource area who frequently use the area for cultural, religious, or subsistence purposes. In some cases, these 'ohana were seeking to re-establish and revive cultural, religious, or subsistence uses of the area. These persons had ahupua'a tenant gathering rights under Article XII, Section 7 of the Hawai'i State Constitution.

   Also included were members of 'ohana ~~were~~ who may be non-residents but whose genealogies trace their origin or some family connection to these districts even though no family member resided there. These are individuals who have maintained close ancestral ties to the major study areas and those who wish, particularly from a distance, to maintain an opportunity to exercise particular religious or gathering rights. These persons can claim ahupua'a tenant gathering rights under Article XII. Section 7 of the Hawai'i State Constitution through their 'ohana ties to the area being considered.

B. Non-Hawaiians who were part of a Hawaiian 'ohana through intermarriage or hanai (raised as part of the 'ohana) were included in the above categories. As members of 'ohana who were resident of a district, these persons could also claim ahupua'a tenant gathering rights under Article XII. Section 7 of the Hawai'i State Constitution.

C. Hawaiian individuals or groups who lived outside of the natural/cultural resource area but have established or seek to re-establish and revive religious, cultural, or subsistence practices in those districts. This would include traditional Hawaiian healers who may use these areas to gather la'au lapa'au (native plants for medicine); hula halau whose chants and dances honor deities associated with the natural/cultural resource area who may need to gather certain native plants from these districts; and fishermen, hunters, gatherers, taro planters, etc. who have accessed and used the natural/cultural resource area for subsistence. Access for this group is covered under HRS 1 - 1 "Hawaiian usage" but if they are not residents of the area they are not included under ahupua'a tenant gathering rights under Article XII. Section of the Constitution.

D. Non-Hawaiians who may frequent the area in the company of Hawaiians who are in the above categories were also included. Access for this group is covered under HRS 1 - 1 "Hawaiian usage."

E. Native Hawaiian groups/organizations who have established or seek to revive and re-establish cultural, religious, or subsistence customs, beliefs, and practices. Proposed amendments to the American Indian Religious Freedom Act (AIRFA) provides a useful basis for defining the term "Native Hawaiian organizations." It states Native Hawaiian organization means, "any organization which is composed primarily of Native Hawaiians, serves and represents the interests of Native Hawaiians and whose members - (A) practice a Native American (Hawaiian) religion or conduct traditional ceremonial rituals, or (B) utilize, preserve, and protect Native American (Hawaiian) religious sites." The Native American Graves Protection and Repatriation Act (NAGPRA) definition of Native Hawaiian organization is "any organization that 1) serves and represents the interests of Native Hawaiians; 2) has as a primary and stated purpose the provision of services to Native Hawaiians; and 3) has expertise in Native Hawaiians affairs. Such organizations shall include the Office of Hawaiian Affairs and Hui Ma lama I Na Kupuna 'O Hawai'i Nei" (43 CFR Part 10.2, Definitions).

   For the purposes of this study, the Native Hawaiian groups/organizations sought included interests beyond religion. Such groups include those organized for the purposes of subsistence and cultural perpetuation.

F. In the case of Hawaiian Homelands (Kaohe-Maku'u, Puna; Kahikinui, South Maui), individuals and their 'ohana who were seeking to become established on those lands as stewards, curators, settlers, or license holders.

Selecting and Contacting Respondents

A list of key informants was compiled after extensive discussions with researchers who had conducted previous studies in the two districts, discussions with community leaders, a review of lists or registries of meetings and organizations related to the subject of geothermal development, and names suggested to us by those who were interviewed. Upon contacting individuals to request interviews, we also requested the names of other potential key informants. This broad-based "snow-ball" sampling procedure provided a means for cross-checking the names of individuals as qualified key informants and provided representation from most, if not all, relevant sectors of the communities under study. Interestingly, it became apparent that given the criteria that was used for selecting respondents, the community of those deemed to be cultural experts was generally small and well-known. In other words, the same names were mentioned repeatedly. A number of individuals in a Hawaiian community may possess different kinds of knowledge, backgrounds, and life experiences that qualifies them as a "cultural expert" and they are acknowledged by the community for his or her particular expertise.

The preliminary lists of potential respondents (individuals, groups/organizations, 'ohana) were delivered to representatives of the State Historic Preservation Department (SHPD) (i.e., Holly McEldowney, Nathan Napoka) and Oak Ridge National Laboratories who reviewed them and recommend additional informants for in-depth interviews and focus groups. This process

ensured that the final list was as representative and exhaustive as possible.

Press releases discussing the study project were delivered to and published in the Hilo Tribune Herald, Maui News, West Hawaii Today, and Office of Hawaiian Affairs newspaper (Ka Wai Ola O O.H.A.) as a primary means for publicizing the study. The same press releases were used to solicit names of organizations or individuals interested in reviewing a public version of the survey prior to its general release and its citation in the EIS. This review satisfied the public participation requirement of the Section 106 review process under the National Historic Preservation Act. Newspaper articles also served as a way to contact potential respondents whose names did not arise through other means. This assured that a broad range of individuals were at least offered an opportunity to participate.

Other criteria used to select the individuals for in-depth interviews were related to the breadth of an informant's knowledge; the clarity of their ideas or recollections; the risk of losing this information due to old age or ill health; the enthusiasm of the informant to participate; and the representativeness of a particular kind of knowledge or experience. The articulateness of the respondent was not be a major consideration although it was important that most of what s/he verbalized was discernable. Although many of the informants were bilingual (Hawaiian and English), all interviews were conducted in English.

All of the interviews were audio-taped and, as a back-up, hand-written notes were taken by a research assistant. Note-taking was important because some of the interviews occurred in environments that were comfortable for respondents, but not always conducive to a clear tape-recording (e.g., near the ocean or highway, in a rainstorm).

The on-site coordinator for South Maui assisted in making contacts and arranged interviews with informants. In most cases, he was present during the interviews and focus group sessions. Because he was a well-known and respected member of the Hawaiian community on Maui, his presence appeared to provide a basis for developing rapport and trust among informants. Trust is essential in this type of research because many Hawaiians are reticent about sharing cultural information for fear of it being misused or misinterpreted.

The investigators proceeded in Puna by directly contacting prospective informants. First contacts were made in person with key 'ohana groups. After spending time "talking story" and describing our study, a request was made to conduct an interview on a future date. In other cases, efforts were made to network through friends and acquaintances residing in the Hilo and Puna areas to gain access to prospective informants. This process was extremely useful in reaching those who may have been skeptical about the research or not accustomed to the process of scientific inquiry. In other words, it was prudent to have a confidant or family member explain to the informant what the study was about. The first interviews were crucial to the success of the study because of the interrelatedness of the 'ohana residing in Puna and the velocity at which news traveled. In many instances, prospective informants were well aware of the investigators prior to the initial contact.

Areas Assessed in the Questionnaire

The Health Environmental Risk Ranking Report (Minerbi, McGregor, Matsuoka, 1993) identified aspects of Hawaiian and local culture that should be assessed in a socio-cultural impact study. Drawing from this report, the investigators developed open-ended questions that were used in a semi-structured interview format. The emphasis on each of these constructs/variables varied in the interviews according to their relevance and appropriateness to the location and expertise of the informant. Descriptions of relevant variables were tailored to solicit as much specific information as possible on the potential range of beneficial and adverse impacts from the HGP. Informants were asked to assess the extent or level of impact HGP would have and suggest ways to mitigate the impacts.

The major areas/issues that were applicable included:

1. Community Life - Refers to the cohesion and integrity of "cultural kipuka", the continuity of life cycle events and social evolution of an aggregate of residents sharing a common locale, culture and lifeways; the potential for disruption, displacement, or dissolution.

2. Family Life - Refers to the cohesion and integrity of the ʻohana or extended family system; the continuity of dynamics, structure, and traditions as they relate to such features as child-rearing networks, psychological and resource support, sharing, exchange, and housing.

3. Human Well-Being and Spirituality - Refers to physical, mental, and spiritual health and how they may be affected by development and social change, cultural disruption, or displacement.

4. Human Ecosystem - Refers to the individual in the context of a physical or social environment. In terms of the ethnographic study it relates to a sense of place, a particular locale to which individual/family has genealogical and/or spiritual ties, where life forces are experienced, a place of healing, or where subsistence practices including hunting, fishing, and gathering occur.

5. Natural Environment and Ecological Resources - Refers to the differential resource zones (e.g., ocean, forest) within a particular district that offer various types or species of resources necessary to maintain a livelihood and cultural practices.

6. Customs and Practices - Refers to subsistence practices and the methods used to obtain natural resources; spiritual beliefs and associated customs and practices; behaviors and beliefs that reflect genealogical or intergenerational linkages to ancestral lands; and the significance of cultural/historic sites.

7. Rights - Refers to the exercise of rights defined in the Hawai'i State Constitution, the Hawai'i Revised Statutes, the American Indian Religious Freedom Action, and common law which was incorporated into the Hawaiian legal system in 1892.

8. Economics - Refers to rates and types of employment, rates of taxation, cost-of-living (e.g., income in relation to expenses; housing costs, quality, and availability), local employment opportunities and preferences, public opinion surrounding proposed economic development, and community-based and culturally appropriate development initiatives.

Whenever necessary, interviewers used a mitigative approach. That is, they solicited sensitive cultural information on the most general level that still allowed adequate assessment of potential impacts. Under appropriate circumstances, they determined whether avoiding an area described as culturally sensitive could substantially reduce potentially adverse impacts.

Focus Group Discussions

The focus group format was particularly useful for assessing intracultural variations on Hawaiian customs, beliefs, and practices; perceptions of HGP impacts across groups; and ideas for mitigation. Participants were guided through questions and presented with the map in a manner similar to the in-depth interviews.

The agenda for the focus groups was as follows:

a. a brief presentation of data from the in-depth interviews, a synopsis of the HGP implementation plan, and maps indicating site and use areas. The maps will also be used to identify sites or use areas not previously mentioned.

b. a semi-structured discussion of the aforementioned topics in order to assess, affirm, and review related issues.

c. a semi-structured discussion of anticipated/perceived socio-cultural impacts, both positive and negative.

d. a discussion of mitigation/prevention measures, distinguishing which are appropriate and acceptable from those that are not.

Integration and Data Analyses

Most of the data collected was qualitative in nature. The information gathered from the in-depth interviews, focus groups, and on site visits were integrated and evaluated by the investigators along with the information derived from the literature and chant searches in order

to produce a complete description of the ethnographic resources of the study areas. Integration and evaluation involved the selective abstraction of transcripts of interview tapes, organizing field notes, and integrating information collected in the literature-search phase with that collected during fieldwork.

As previously mentioned, all interview and focus group participants will have the opportunity to review their contributions for accuracy and completeness and to determine whether they contain any sensitive information that should not be released in a public document. If concerns are expressed about the release of sensitive information, then the consultants will prepare two versions of the survey report, one for public release and one for restricted access by key decision-makers and support staff. Native Hawaiian groups, organizations, and individuals who participated in the survey or who expressed interest in conducting a review of the results will be asked to review the draft survey report (or the draft public survey report) for accuracy, thoroughness, and adequate maintenance of confidentiality.

The report will include the following components:

1. A narrative description of areas of cultural and historical use and significance and known natural resources used for cultural, religious, and subsistence purposes in the project areas;

2. A narrative description of Native Hawaiian cultural, religious, and subsistence practices in these areas;

3. A map indicating the known natural and cultural resources used for cultural, religious, and subsistence purposes in the project areas;

4. A list and summary of Native Hawaiian concerns about the potential affects of the HGP on Hawaiian cultural, religious, and subsistence beliefs, customs, and practices in the project areas; and

5. Recommendations concerning future development and proposed mitigation to address anticipated negative impacts.

Scope and Limitations of the Study

The scope of work was determined by the Oak Ridge National Laboratory (ORNL). This study is limited to the proposed project areas in Puna on the island of Hawai'i, and South Maui. However, the HGP would extend far beyond these two areas. The proposed transmission route would have impacts in other districts on the island of Hawai'i, along a corridor from Puna through Pohakuloa and to Upolu point. The HGP's proposed submarine cable would also affect Hawaiian cultural, religious, and subsistence practitioners who use the channels between Maui, Kaho'olawe, Moloka'i, and Lana'i. There are also Hawaiian communities on Moloka'i and in

Waimanalo which may be affected. Given the limited resources available for this study, the consultants were unable to gather information beyond the two districts described in this design proposal.

The description of tasks outlined by ORNL specified that the study would focus on an assessment of impacts on traditional "cultural resources" and "cultural and religious practices" consisting of all customary and traditional values, practices, and beliefs associated with natural resources and prehistoric sites located in the two project areas. The study was not designed to involve a poll or large survey, random or otherwise, from the general public.

REFERENCES

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INTRODUCTION TO THE ETHNOGRAPHY OF PUNA AND SOUTH MAUI

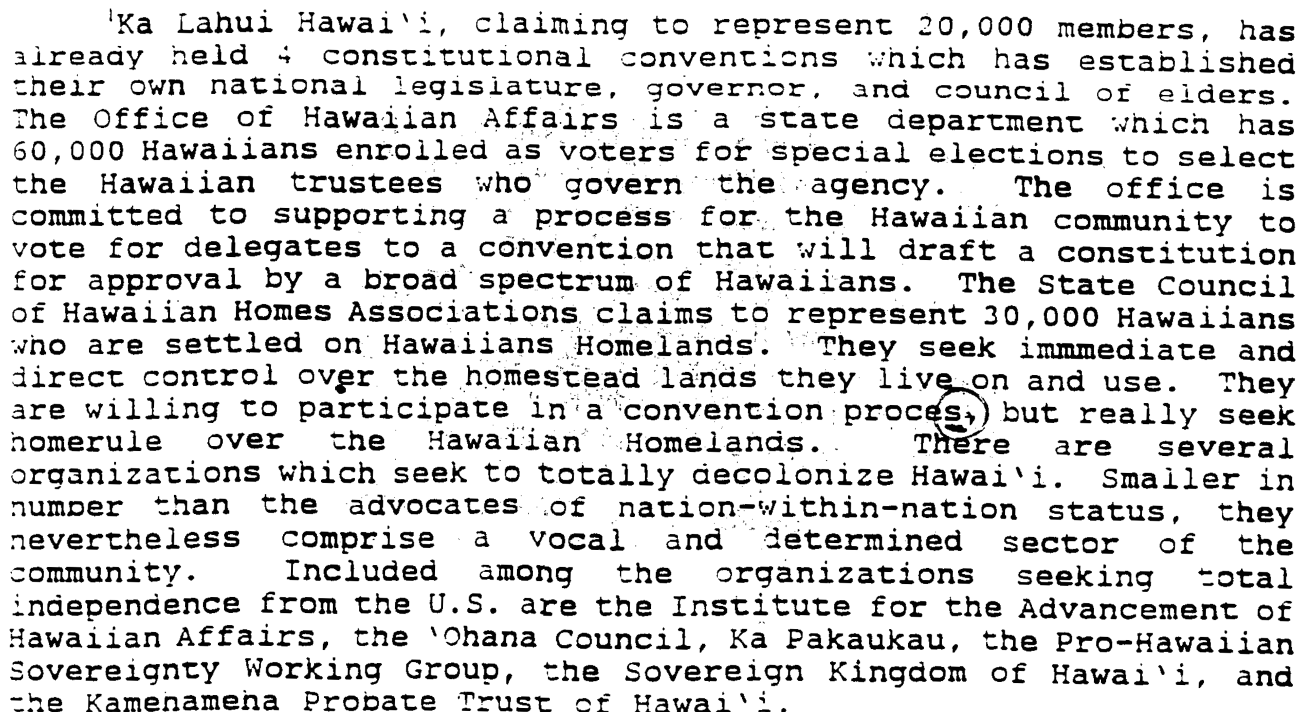
Contemporary Political Status of Hawaiians

Hawaiians today are not organized as a nation. Efforts are underway to reconstitute a government for a sovereign Hawaiian nation and there are many organizations who are involved at different levels in the process[1]. In the absence of a national government, 'ohana (extended family) networks survive as the primary traditional social unit of organization, particularly in rural Hawaiian communities.

It is significant to note that in November 1993, after 100 years, the U.S. Congress passed and President Bill Clinton signed a joint resolution, P.L. 103-150 offering a formal and official apology to the Hawaiian people for the U.S. role in the overthrow of the Hawaiian monarchy on January 17, 1893 and suppressing the sovereignty of the Native Hawaiian people:

The Congress -

(1) on the occasion of the 100th anniversay of the illegal overthrow of the Kingdom of Hawaii on January 17, 1893, acknowledges the historical significance of this event which resulted in the suppression of the inherent sovereignty of the Native Hawaiian people;



[1]Ka Lahui Hawai'i, claiming to represent 20,000 members, has already held 4 constitutional conventions which has established their own national legislature, governor, and council of elders. The Office of Hawaiian Affairs is a state department which has 60,000 Hawaiians enrolled as voters for special elections to select the Hawaiian trustees who govern the agency. The office is committed to supporting a process for the Hawaiian community to vote for delegates to a convention that will draft a constitution for approval by a broad spectrum of Hawaiians. The State Council of Hawaiian Homes Associations claims to represent 30,000 Hawaiians who are settled on Hawaiians Homelands. They seek immmediate and direct control over the homestead lands they live on and use. They are willing to participate in a convention process, but really seek homerule over the Hawaiian Homelands. There are several organizations which seek to totally decolonize Hawai'i. Smaller in number than the advocates of nation-within-nation status, they nevertheless comprise a vocal and determined sector of the community. Included among the organizations seeking total independence from the U.S. are the Institute for the Advancement of Hawaiian Affairs, the 'Ohana Council, Ka Pakaukau, the Pro-Hawaiian Sovereignty Working Group, the Sovereign Kingdom of Hawai'i, and the Kamehameha Probate Trust of Hawai'i.

(2) recognizes and commends efforts of reconciliation initiated by the State of Hawaii and the United Church of Christ with Native Hawaiians:

(3) apologizes to Native Hawaiians on behalf of the people of the United States for the overthrow of the Kingdom of Hawai'i on January 17, 1898 with the participation of agents and citizens of the United States, and the deprivation of the rights of Native Hawaiians to self-determination:

(4) expresses its commitment to acknowledge the ramifications of the overthrow of the Kingdom of Hawai'i, in order to provide a proper foundation for reconciliation between the United States and the Native Hawaiian people:

(5) urges the President of the United States to also acknowledge the ramifications of the overthrow of the Kingdom of Hawai'i, and to support reconciliation efforts between the United States and the Native Hawaiian people.

(see full text in Appendix __)

The indigenous Hawaiian people, unlike Native Americans Aleuts and Eskimos, are not yet recognized as a nation by the United States government. Nevertheless, Congress has included Hawaiians in the definition of Native Americans in federal legislation which recognizes the distinct social condition and cultural beliefs, customs and practices the indigenous peoples within the United States. The definition currently being used in Congress for "Native Hawaiian" is,"any individual who is a descendent of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii." Among such federal laws which are relevant to this ethnography because they relate to the protection of cultural resources are:

(1) American Indian Religious Freedom Act (AIRFA) of 1978. [42 U.S.C. 1996. Pub. L. No. 95-341. 1978] ensures that actions taken or licensed by federal agencies do not interfere with the inherent right of individual Native Americans (including American Indians, Eskimos, Aleuts, and Native Hawaiians) to believe, express, and exercise their traditional religions. These rights include access to religious sites, use and possession of sacred objects, and the freedom to worship through traditional ceremonials and rights. When a federal agency finds, upon consultation, that its proposed action would deny the free exercise of religion and yet determines that there is a compelling need for the action, the decision to proceed may be made, but appropriate mitigation measures to reduce interference with traditional religious practice to the lowest possible level must be included.

(1) National Historic Preservation Act of 1966. as amended [16 U.S.C. 470; 80 Stat. 915; Pub. L. No. 89-665 (1966), and amendments thereto]. Regulations: Protection of Historic Properties (Advisory Council on Historic Preservation) 36 CFR Part 800, as amended. Pertinent addition in the 1992 amendments include: Section 304 (a) -

(b) on withholding from disclosure and Section 101 (d) (6) (A) - (C) on traditional cultural properties of religious significances: and on State consultation with Native Hawaiian groups during the Section 106 Review process.

(2) **Archaeological Resources Protection Act of 1979**, as amended [16 U.S.C. 470 aa - 470 mm: Pub. L. No. 96-95 (1979), and amendments thereto]. To protect archaeological resources on public lands and Indian lands: requires that American Indian tribes be notified prior to any negative impact on cultural and spiritual sites located on federal lands: substantially increases the severity of civil and criminal penalties imposed on unqualified and unpermitted looters: assures that information concerning the nature and location of any archaeological resource may not be made available to the public. This act's provisions do not specifically include Native Hawaiians: however, by implementing ARPA federal agencies have adopted various policies and guidelines that encourage early consultation with concerned Native Americans.

(3) **Archaeological and Historic Preservation Act of 1974**, [16 U.S.C. 469 - 469c: Pub. L. 86-532 (1960), and amendments thereto]. To provide for the preservation of historical and archaeological data which might otherwise be lost as the result of the construction of a dam (or any alteration of the terrain caused as a result of federal construction or federally licensed activity). This law applies if a federal project requires placement of dredged or fill materials along a coast.

(4) **National Environmental Policy Act of 1969**, as amended [42 U.S.C. 4371 et. seq., Pub. L. 91-190 (1970), and amendments thereto]. Regulations of the Council on Environmental Quality, 40 C.F.R. 1500 - 1517. To promote conditions under which "man and nature can exist in productive harmony," federal agencies may take practicable measures to help the Nation "preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice."

(5) **Native American Graves Protection and Repatriation Act of 1990** [25 U.S.C. 3001 - 3013; Pub. L. 101 - 601 (1990)]. NAGPRA Regulations: Proposed Rule (F.R. May 28, 1993), 43 C.F.R. 10. To provide direction on how Native American remains and burial artifacts are to be treated. The statute deals with museum collections receiving federal funds and with ongoing archaeological investigations. NAGPRA encourages in situ preservation of archaeological sites that include burials and requires federal agencies to consult with affiliated, or potentially affiliated, Native Americans concerning the treatment and disposition of cultural remains. Native Hawaiian organizations and Native Hawaiian Home Lands are specifically cited.

The Constitution and Hawai'i Revised Statutes of the State of Hawai'i also recognize the unique status of the Native Hawaiians and affords protection of traditional Hawaiian

beliefs, customs, and practices[2]. The recognition of Hawaiian as an official language of the State of Hawai'i and the acknowledgement that the State of Hawai'i has a responsibility to perpetuate Hawaiian culture lay an important foundation for state protection of Hawaiian culture. In addition, Article XII, Section 7 of the Hawai'i State Constitution states:

> 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.

Throughout over 200 years of continuous contact with Europe, America and Asia beginning in 1778, Hawaiian customs, beliefs, and practices underwent uneven processes of change, continuity, and revitalization. The reign of King David Kalakaua from 1874 through 1891, is distinguished as a period of a renaissance of the Hawaiian culture. Hawaiian culture again went through a period of revival and renaissance in the 1970s and 1980s. A decade after Hawai'i became a state in 1959, the consciousness and practice of Hawaiian cultural and spiritual customs and beliefs heightened. Hawaiian language pre-schools and Hawaiian language immersion classes in Hawai'i public schools were established. The number of hula halau or schools which teach traditional Hawaiian dance and chant increased. Hawaiian music evolved into new forms of expression and gained greater popularity. Hawaiian studies from the elementary to university level was established as part of the regular curricula. Traditional navigational arts and skills were revived with the transpacific voyages of the Polynesian Voyaging Society on the double-hulled canoe, Hokule'a. The traditional practice of aloha 'aina gained prominence and rural Hawaiian communities, strongholds of traditional Hawaiian subsistence lifestyles, gained a new prominence.

At present, there are numerous Hawaiian organizations working for the re-establishment and recognition of a sovereign Hawaiian nation. Hawaiians involved in these organizations seek to improve and uplift Hawaiian health, education and standard of living. Hawaiians also seek to protect and perpetuate the natural and cultural resources essential for religious, cultural, and subsistence custom, belief, and practice. Ultimately, Hawaiians seek full redress for past injustices; restitution of all of the territory of the Hawaiian nation; compensation for mismanagement and destruction of national lands and natural resources; and most significant, the re-establishment and recognition of a government to exercise

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[2]A comprehensive compilation and analysis of laws and court cases affecting Native Hawaiians was published as the Native Hawaiian Rights Handbook in 1991 by the Native Hawaiian Legal Corporation which was edited by M. Mackenzie, esp.

sovereignty and self-determination (Hawaiian Sovereignty Advisory Commission, 1994).

Land/Nature: The Foundation Of Hawaiian Customs, Beliefs, and Practices

Aloha 'aina, aloha i na akua, aloha kekahi i kekahi / love the land, love the gods, and love one another, expresses the three precepts which form the core of traditional Hawaiian philosophy, world view and belief system. Culturally, it was important for Hawaiians to sustain supportive, nurturing and harmonious relations with the land, the gods, and each other, particularly their 'ohana or extended family. Moreover, the Hawaiian, the land, and the gods were believed to be spiritually, culturally, and biologically united as one - lokahi - by lineal descent. In their mo'oku'auhau / family genealogy chants, Hawaiians traced their lineal ancestry to historical figures and ultimately, through them, to various deities and gods of the land, ocean, forest and nature (Handy & Pukui, 1958; Johnson, 1981).

The land and all of nature is the source of existence for the Hawaiians - not only as the origin of humanity, but also as the source of natural resources for day-to-day subsistence. Traditionally, the Hawaiian did not possess or own the land or its abundant resources. Instead, they maintained stewardship over it--planting and fishing according to the moon phases and the changes from rainy to dry seasons. The traditional Hawaiian land system evolved to provide Hawaiians access to the resources they would need for subsistence and to allow for stewardship over the land.

Throughout history, the Hawaiian people maintained a deep abiding faith in the land and its power of providing physical sustenance, spiritual strength, and political empowerment.

Hawaiians who petitioned King Kamehameha III in 1845 not to sell land to foreigners reflected this viewpoint when they wrote:

> If, perhaps, the land is covered over and crowded with the dollars of those who purchase land, from Hawaii to Kauai. Ten, perhaps a hundred thousand million. Will most of these dollars be for the land if we agree to its sale? We will not have anything at all to say about this money. Very few indeed will be the dollars in the hands of the true Hawaiians, and in the land. The land strives [kulia] for revenue every day. The earth continues to receive its wealth and its distinction every day. There would be no end of worldly goods to the very end of this race. But, the money from the sale of land is quickly ended, by ten years time.

The historian Samuel Kamakau who wrote of the drastic changes to Hawaiian lands and 'ohana in the 1850s and 1860s made the following observation about how Hawaiians related to the land:

You foreigners regard the winds, the rain, the land, and sea as things to make money with, but we look upon them as loving friends with whom we share the universe. We adjust our lives to them. You try to bludgeon them to your will. That is why we do not like this civilization you are trying to thrust upon us. It is not rich and sweet to our taste nor satisfying to our hearts.

Members of the Aha Hui Pu'uhonua O Na Hawai'i (Hawaiian Protective Association) reflected their trust and reliance upon the land and its power to heal the Hawaiian people when they worked to establish the Hawaiian Home Lands Program in 1920. The following is an excerpt from a memorial that they sent to the U.S. Congress:

> The soil is a redeeming factor in the life of any race, and our plan for the rehabilitation of the Hawaiians is futile unless the question of returning to mother earth takes precedence to all other considerations in such a plan. . . . In so far as experience has proven and as much as science has revealed, physical health and vigor, the power to propagate the race, eradication of diseases, the restoration of normal domestic living conditions, the elimination of poverty and pauperism, the establishment of business relationship with the business world, the deepened appreciation of the soil and of the material wealth, - all of these benefits come, not by the fashionable [sic] life of this century, but, by the intimate acquaintance with the life and the possibilities of the soil.

A contemporary practitioner of Hawaiian religion who has been instrumental in establishing recognition of native Hawaiian religious beliefs by the U.S. courts, explains the relationship of the Hawaiian people to land and the nature deities as follows:

> At its root, Aloha 'Aina is the belief that the land is the religion and the culture. Native Hawaiians descend from a tradition and genealogy of nature deities: Wakea, Papa, Ho'ohokulani, Hina, Kane, Kanaloa, Lono and Pele - the sky, the earth, the stars, the moon, water, the sea, the natural phenomena such as rain and steam; and from native plants and animals. The native Hawaiian today, inheritors of these genes and mana [spiritual power], are the kino lau or alternate body forms of all our deities. (Aluli, 1988)

Historically, the special relationship of Hawaiians to the land and their spiritual ancestors remained strongest where foreign penetration and the market economy was the weakest. These districts include the districts of Ka'u, Kona, and Puna as well as Waipi'o Valley on the island of Hawai'i ; the Hana district (from Ha'iku to Honua'ula) and Kahakuloa Valley on Maui; parts of the Leeward and Windward districts on O'ahu; the districts of Anahola and Kekaha on Kaua'i, the entire island of Moloka'i, and the entire

island of Ni'ihau[3].

Cultural Kipuka: Framework For The Ethnography Of Puna & South Maui

The social significance of traditional Hawaiian rural communities for the perpetuation of native Hawaiian society may be compared to a phenomenon in nature. Botanists who study the natural rainforest in the area of the active Kilauea volcano have observed that eruptions which destroy and cover up large areas of forest lands, leave little oases of native trees and plants in their wake which are called kipuka. From these natural kipuka come the seeds and spores for the eventual regeneration of the native flora upon the fresh lava. For contemporary Hawaiians, the traditional Hawaiian rural communities are cultural kipuka from which Hawaiian culture can be regenerated and revitalized in the contemporary setting.

Referring to the 17 rural districts where Hawaiians were still predominant in 1930, Andrew Lind, in his book An Island Community: Ecological Succession in Hawaii, wrote of the significance of these areas for the continuity of Hawaiian culture:

> These racial havens - small -population islands still relatively secure from the strong currents which have swept the archipelago as a whole into the world-complex of trade - are strikingly similar to those which appear in the census of 1853. The dry and rocky portions of Kau, Puna and the Kona coast, the deep valley of Waipio, the wild sections of Hana, Maui, portions of lonely Lanai and Molokai where industrial methods of agriculture have not succeeded, the leper settlement, and Niihau, the island of mystery - these are the places of refuge for some 4,400 or nearly one-fifth, of the native Polynesians. . . .
>
> The old fish and poi company, with its accompaniment of tutelary deities, taboos, religion, and magic, still persists in modified form within many of these isolated communities. A small plot of taro and access to the sea and the mountains are apparently all that is required for the satisfaction of their material wants. The wage from an occasional day's work on the government road enables them to purchase the necessary supplies which the old economy cannot now provide. . . . The natives themselves have found these rural havens where the economy of life to which they are best adapted can survive (Lind, 1938).

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3 For example, the 1884 Census by the Kingdom of Hawai'i showed particularly high concentrations of native Hawaiians as follows: Puna with 95 percent; South Kona with 92 percent, North Kona with 94 percent and Ni'ihau with 98 percent.

(*) should be included in "References"

Examining the history of Puna and South Maui as cultural kipuka is a useful framework of analysis for understanding the historical trends of social, political, and cultural change and continuity within these districts. Davianna McGregor, in her doctoral dissertation, "Kupa'a I Ka 'Aina:*Persistence On The Land" studied rural Hawaiian communities and provided a summary of the features and historical trends which were common to these areas and distinguished them as cultural kipuka. The following sections describe these historical features and trends in order to establish the framework for discussing the ethnography of Puna and South Maui.

Cultural kipuka were traditional centers of spiritual power. In traditional Hawaiian chants and mythology, major akua (gods) and Hawaiian deities were associated with the areas. The districts were isolated and difficult to access over land and by sea. Due to the lack of good anchorage and harbors, early traders often bypassed these districts in favor of more accessible areas. The missionaries entered these areas and established permanent stations during a later period than in other parts of Hawai'i. Thus, traditional Hawaiian spiritual beliefs and practices persisted there, without competition, for a longer period of time. As Christian influences entered these areas, they co-existed with traditional beliefs and practices.

The geography of these districts discouraged the widespread or longterm development of sugar plantations. In the arid areas, the lack of water resources made development of sugar plantations unfeasible. In the areas with sufficient rainfall, the terrain was too steep or rugged for plantation agriculture. Where plantation agriculture failed in Moloka'i and the Hana district, ranches were able to succeed. The ranches employed Hawaiian men as cowboys and allowed them to live with their families in these isolated districts and pursue traditional fishing, gathering, and hunting activities to supplement their wages.

Where neither plantations nor ranches were established, traditional subsistence activities continued to be pursued, undisturbed by modern economic development, throughout the period we are examining. In the wetland areas taro continued to be farmed, often in conjunction with rice. In the arid areas, sweet potatos, dryland taro and other traditional and introduced crops suited to the dry soil and climate were cultivated. The undeveloped natural resources in these areas provided an abundance of foods for the native Hawaiians who lived in these districts. Forested lands provided Hawaiians with fruits to eat; vines, plants, and woods for making household implements and tools; and herbs to heal themselves. They provided a natural habitat for animals that were hunted for meat. Marine life flourished in the streams. The ocean provided an abundance of food. Subsistence activities continued to be the primary source of sustenance for the native Hawaiians. Production in these districts were primarily oriented around home consumption. In some areas small stores provided the Hawaiians access to some basic modern amenities such as kerosene, lanterns, tools, flour, crackers, and sugar. However, for the most part, rural Hawaiians were not consumer oriented. Money to purchase these basic provisions came from selling taro or fish or an occasional day's labor for a local entrepreneur or the government road crew.

Rural Hawaiians who lived in these districts were able to acquire the basic necessities for their families through subsistence activities upon the land by employing traditional knowledge and practices passed down to them from their kupuna (elderly). Family knowledge about prime fishing grounds and the types of fish which frequent the ocean in their district at different times of year usually assured Hawaiian fishermen of successful fishing expeditions.

Many Hawaiians in rural districts continued to cultivate fish in ponds and the open ocean by regularly feeding the fish in conjunction with making offerings at the ku'ula shrines that marked their ocean fishing grounds. Taro and other domestic crops were planted by the moon phase to assure excellent growth. Rural families took advantage of seasonal fruits and marine life for their regular diet. Native plants were utilized for healing of illness by traditional methods which involved both physical and spiritual cleansing and dedication. Cultural knowledge attached to the traditional names of places, winds and rains of their district informed rural Hawaiians about the affect of the dynamic forces of nature upon the ocean and the land in their area and activities were planned accordingly. Legends and chants informed them about how their ancestors coped with such elements.

Thus, in these rural communities, Hawaiian custom, belief, and practice continued to be a practical part of every day life, not only for the old people, but also for the middle aged and the young.

Very few haole (Caucasians) settled in these districts and there was very little interaction of Hawaiians with the outside community. Chinese who completed their contracts on the plantation and did not return home or move to the mainland leased or rented lands from the Hawaiians. Some served as middlemen marketing whatever taro and fish Hawaiians desired to sell in the towns and bringing back consumer goods for sale or barter in the rural communities. Where there was a small rural store in these districts, it was invariably owned by a Chinese, who in some cases was married to a Hawaiian woman.

Hawaiians in these rural districts maintained their large extended family networks. The practice of hanai, or the raising of adopted children, continued to be commonly practiced. Ties with family who moved to another island, especially, O'ahu, continued to be maintained. While some of the children moved away to the city, one or two would remain behind to care for parents and the family kuleana lands. Often those who moved away would send children home to be raised by the extended family. They would periodically visit their families in the rural areas.

Hawaiians in these districts continued to trace unbroken lineal descent to the original Hawaiians who had settled the districts as well as to the 'uhane (spirits), 'aumakua (ancestral deities), and other deities of the land itself. These Hawaiians continued to acknowledge the presence of their spiritual ancestors in the surrounding land through the passing on of chants and legends; maintained respectful practices in the use of the land, streams, ponds,and ocean, perpetuating usage of the particular place names of the district;

and retained knowledge of the mythical and historical events and deities associated with the area.

Rural Hawaiians today descend from those who were content to remain in the isolated districts while many others moved out during the first three decades of the twentieth century. For those who stayed behind, life in those districts was filled with interesting natural phenomena and forces which challenged them as they sought out their subsistence needs. They patterned their economic activities around the life cycles of the various fish, animals, and plants that they depended upon for food. Thus, from month to month, as the seasons shifted from wet to dry, their food sources changed in accordance with the type of fish, fruits, and plants that were in season. This knowledge of the environment and natural life forces was often the substance of Hawaiian traditions, beliefs, and practices as the Hawaiians chose to personify the forces of nature and create legends and myths to describe and remember the dynamic patterns of change that they observed. According to Mrs. Pukui:

> We have not been taught Hawaiian in schools. We have been taught Hawaiian by our makua and our kupuna. And now they're gone and we are the kupuna today. In the future, the children will not get the same old way of life and they must understand that when they read the books. We must write the books. We must present the Hawaiian side, because sometimes other writers write of us too critically, not understanding our ways. They write too critically of us. They don't understand why we did certain things. But we had a reason to everything we did. And when they write of us as superstitious people - are we? Are they sure we are superstitious? We had a reason for doing things. Sometimes our people couldn't explain, so that the malihini would understand. But their explanation suited our own people. You can't eat a certain thing because that's you 'aumakua. Well when you look for the other side, you can't eat a certain thing because you are allergic. Your system won't accept it[4].

Folk beliefs and legends contain, in a story form, traditional knowledge accumulated by Hawaiian ancestors in utilizing the natural resources of these areas. They provide rural Hawaiians with information they need to understand and adapt to the qualities and character of the landscape in which they live - the climate, the variations of rain and wind, soil conditions, flora, fauna, and seasonal changes. The folklore also provide a profound sense of identity with the 'aina as well as responsibility to provide stewardship of the area where they live.

In the following sections, the history of the districts of Puna and South Maui as contemporary cultural Kīpuka will be reviewed.

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4 Mary Kawena Pukui, during interview with Dolly Mahalo, Josephine Marciel and Francis Marciel, November 30, 1961, Kaupo, Maui, #86.03.1,2,3.

unclear, what does this # mean?

INSERT SECTION ON PELE RELIGION, BELIEFS, AND PRACTICES

ETHNOGRAPHIC OVERVIEW OF PUNA HAWAI'I

Puna, A Traditional Wahi Pana (Sacred Place)

"Puna, mai 'Okiokiaho a Mawae"
"Puna from "Oki'okiaho to Mawae."

This traditional 'olelo no'eau or proverb describes the boundaries of Puna as going from 'Oki'okiaho on the Ka'u side to Mawae on the Hilo side (Pukui, 1983, #1777). Comprising 311,754 acres, the island of Kaua'i (354,112 acres) could almost fit within the district.

Puna is a most sacred area in all of Hawai'i, according to traditional Hawaiian scholar and hula master, Pualani Kanahele. Located in the easternmost part of Hawai'i island, the easternmost island of the Hawaiian chain, the day and all of life springs forth in Puna. The northeast tradewinds with its cloud formations and rainfall first encounter Hawai'i in Puna.

"Ka makani hali 'ala o Puna"
"The fragrance-bearing wind of Puna"

This proverb of Puna speaks of how the wind, as it travels over Puna, luxuriant with maile, lehua, and hala, bears the fragrance of the leaves and flowers (Pukui, 1983, #1458).

Puna means well-spring. Hawaiians observed how the forests of Puna attract the clouds to drench the district with its many rains, such as "ka ua moaniani lehua o Puna" / "the rain that brings the fragrance of the lehua of Puna" (Pukui, 1983, #1587). The rains refresh and enrich the Puna water table and sustain the life cycle of all living things in Puna. The recharge cycle in the Puna district.which, is important to the water table of the entire island.

The waters of the newest and easternmost district of Puna are believed to originate with Kaneikawaiola, the Hawaiian god of fresh water sources. His domain is traditionally in the east. As guardian of the Pele clan, Kaneikawaiola protects the subsurface waters, main source of the volcanic steam which forms the bloodstream of the deity Pele.

The steam is believed to be the mana, the life force and the energy of Pele. When Pele does not actively erupt, the steam is the main form in which she manifests herself. When there is steam in the forest, Pele is thought to be there. That is her identity, her imagery and her manifestation. Throughout the district of Puna, traditional chants tell of warm pools in caves and under the ground, such as Kaukala and Punahakeone. These are sacred bathing places of Pele. Pele practitioners believe that the waters of the Puna district are sacred to Kaneikawaiola and that the steam generated by the heat of Pele are sacred to Pele.

Puna is also where new land is created and new growth and new life sprouts. The land is sacred. fresh , clean. untouched and after vegetation regenerates upon it. then it is ready for human use[5].

The following the chant "Ke Ha'a La Puna I Ka Makani." translated by Pualani Kanahele elaborates on the primal elements and features of Puna which Hawaiians celebrate in all legend. chant. and hula.

Ke Ha'a La Puna I Ka Makani

1. Ke ha'a la Puna i ka makani
Puna is dancing in the breeze

2. Ha'a ka ulu hala i Kea'au
The hala groves at Kea'au dance

3. Ha'a Ha'ena me Hopoe
Ha'ena and Hopoe dance

4. Ha'a ka wahine
The woman dances

5. 'Ami i kai o Nanahuki
(She) dances at the sea of Nanahuki

6. Hula le'a wale
Dancing is delightfully pleasing

7. I kai o Nanahuki
At the sea of Nanahuki

8. 'O Puna kai kuwa i ka hala
The voice of Puna resounds

9. Pae i ka leo o ke kai
The voice of the sea is carried.

10. Ke lu la, i na pua lehua
While the lehua blossoms are being scattered.

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5 Pualani Kanaka'ole Kanahele, lecture to student body of Kamehameha Schools, May 2, 1990.

11. Nana i kai o Hopoe
    Look towards the sea of Hopoe

12. Ka wahine 'ami i kai o Nanahuki
    The dancing woman is below, towards Nanahuki

13. Hula le'a wale
    Dancing is delightfully pleasing

14. I kai o Nanahuki
    At the sea of Nanahuki

Pualani Kanahele has provided the following interpretation of this chant which expounds upon the qualities of Puna which distinguish it as a singularly sacred area where the ha'a form of hula originated.

"Ke Ha'a La Puna" is the first recorded hula in the Pele and Hi'iaka saga. Hi'iaka performed a hula to this mele to please her older sibling. The motif of this mele focuses on ha'a or hula therefore discussion of this mele concentrates upon the subject of hula. Also included in this discussion are place names, weather phenomena, movements of nature and natural imagery.

Ha'ena, Hopoe, Kea'au, Nanahuki and Puna are the land sections or land features mentioned in this mele. Puna is the district in which these places are found. Puna is also the land section that inspires hula creation because of the natural movements of wave, wind and trees.

Puna is the source of regenerative power. Some examples are the rising of the sun, volcanic creation of new land and the growth of new vegetation on this new formed land. Puna is described as, Ka 'aina i ka houpo a Kane or the land in the heart of Kane. Kane is one of the four major Gods of the Hawaiian pantheon and Puna is affected by all of the manifestations of Kane.

Puna is the easternmost land section of the Hawaiian archipelago and Kane represents the east. Kane represents the sun and Kumukahi and Ha'eha'e, the gateway to the sun, are located in Puna. Literally the word puna means well-spring and fresh water is represented by Kane. The northeast side of the island chain is known as the ko'olau or windward. The windward sides of the islands are the rain sections.

The Moa'e, or tradewind, brings the rain clouds. In our story line the easternmost point or Puna receives the rain first. The rain together with the sun in the Puna area are the nurturing substances which induce incubation and growth of vegetation on the new land. The other agent vital to this growth is land itself and the processes through which new land develops. Lava flow which creates new land is credited to the creative power of

Pelehonuamea and her siblings.

Kanehoalani, the father of Pele is a Kane form. At the end of her migration Pele finds herself in the eastern district of Hawai'i island and acknowledges his presence by calling o[illegible] [illegible] greeting to him in the east.

"E Kanehoalani, e Kanehoalani aloha kaua."
"Kanehoalani, Kanehoalani greeting to us."

Pele establishes residency here and along with her sister Hi'iakaikapoliopele gains the reputation of the women of the east. Ho mai Pele is one of the many chants associating Pele with the east.

"Holo mai Pele mai ka hikina"
"Pele travels from the east"

Pele is the manifestation of the out-pouring of magma and the primary causation of new land. The Hawaiian word for lava is pele, whether the lava takes the form of pahoehoe, 'a'a or fountaining it is still called pele. The phenomenon of Puna alludes to the impression of newness, birth, creation, incubation, reproduction, genitals and the concepts related to an earthly or cosmic creation. The regenerative elements of Puna includes Kane and Pele and their manifestations of fresh water, sunlight, and land.

1. Ke ha'a la Puna i ka makani
Puna is dancing in the breeze

Hi'iaka, the youngest sister of Pele is asked by Pele to do a ha'a and a mele. She satisfies her older sister's request with "Ke ha'a la Puna i ka makani." The ha'a or dance which she exhibits is a creative exposition in praise of the environment around her and a celebration of the regenerative power of the coupling of land and flora.

Hi'iaka's kinolau or body forms are the flora which readily grows on new lava flows. Therefore it is Hi'iaka's place to celebrate this newly ~~mad~~ made land upon which her body forms are given life.

The poetic mind of the Hawaiian saw the wind as a dramatic character with many faces. For instance, when the wind blows on your back in certain situations it is the element of support and encouragement. When the wind is accompanied by the rain it can be interpreted as destructive and piercing such as the Kipu'upu'u wind and rain. The Ka'ilialoha wind has a reputation of snatching away your love never to return. The Malanai wind is so comfortable and pleasant it is able to entice and encourage love making. In association with Hi'iaka the wind is the primary component which aids Hi'iaka in the dispersal and distribution of flora. However, the phrase, is ka makani, or in the wind, gives movement to Puna and this flowing movement created by the wind is worthy of imitation

and thus a basic and primal form in ha'a is born.

2. Ha'a ka ulu hala i Kea'au
The hala groves at Kea'au dance

The abundance of hala in the Puna district gives birth to this saying and the bounteous supply of hala in Puna is credited to Pele.

The hala is valuable because the leaves are woven into mats, baskets and other usable items. The ripe yellow and orange fruit are often compared to the glow of a lava flow. The ripe fruit is also made into a lei and on Hi'iaka's journey to Kaua'i to fetch Lohi'au she wore a hala lei. Kapo'ulakinau, another protector and champion of the Pele clan, wore hala leis often. Kapo was the female deity of 'ana'ana and 'ana'ana practitioners wore hala leis often to ward off evil influences.

The ulu before hala is the qualifier which simply means grove however ulu indicates the abundance in growth of hala in Puna. The name of Kea'au gives one a sense of place. Kea'au is an ahupua'a in the district of Puna close to the Hilo-Puna borders.

Lines 2, 3, 4, 5, 6, 7 and 8 have patterns with definite emphasis: a) words of dance such as ha'a, 'ami, and hula b) place names associated with hula as Kea'au, Ha'ena, Hopoe, c) elements of land, sea, air and their movements and finally, d) the woman, Hopoe.

The natural choreography allow us to appreciate the visual movements of nature and begin to develop imagery associated with the aural interpretation of poetry.

Puna produces sounds with the beating of the sea on the cliff. This sound is magnified through the groves of hala. The hala grove becomes the resonator. The sea movements of Puna as it heaves, rolls, dashes, splashes, sprays and vibrates, produces various distinct sounds and chords. The various sounds emanating from the hala grove are symbolic of the sounds reproduced by the hula implement which excites and provokes movement for the dancer.

The mele (song) explains the role of the deities in hula. They provide the means and the arena and one must be ingenious and create the dance by imitating the things around us. Imitation of nature gives praise to those Deities responsible for different aspects of nature. Pele's energy, her explosive, dramatic creative tactics of land birth deserve praise. The dualistic nature of Hi'iaka and here procreative powers of vegetable growth also deserve praise. The land and vegetable manifestation of these sisters provides initial movement and energy in creating hula. The hula associated with these deified sisters are pure original movement and pure sound.

Having generally reviewed the way in which the Puna district is regarded in Hawaiian tradition by the Hawaiians of old and by Hawaiians today who continue to cherish and

honor those traditions, we will examine the history of change and continuity in the district.

Puna's Mythical Era

In the myths of Hawaiian oral tradition, the islands were first inhabited by akua (gods) and deities. These represented the natural elements of nature which shaped the landscape and remained as features of the land.

The myths and legends of Puna are dominated by Pelehonuamea, Hawaiian goddess of the volcano, and the members of her fire clan who migrated from their distant homeland through the northwest islands of Hawai'i until they settled in Puna, Hawai'i. The following chant, translated Pualani Kanahele, is one of many which describe their migration (Kanahele, 1992).

Ke Ka'ao Na Pele, I Ha'alele Ai Ia Maui

1. Aloha o Maui, aloha e!
   Farewell to you Maui, farewell!

2. Aloha o Moloka'i, aloha e!
   And you Moloka'i, farewell!

3. Aloha o Lana'i, aloha e!
   Farewell to you Lana'i, farewell!

4. Aloha o Kaho'olawe, aloha e!
   Farewell Kaho'olawe, farewell!

5. Ku makou e hele, e!
   We rise to travel

6. Hawai'i ka ka 'aina
   To Hawai'i, our land

7. A makou e noho ai a mau loa aku;
   Where we will reside forever;

8. Ke ala ho'i a makou i hiki mai ai,
   We follow the path until we arrived,

9. He ala paoa 'ole ko Kamohoali'i,
   A path not found by the paoa rod

10. Ko Pele, ko Kanemilohai, ko Kaneapua,
    But one traveled by Kamohoali'i, Pele,
    Kanemiloha'i, Kaneapua.

11. Ko Hi'iaka ka no'iau i ka poli o Pele,
    And Hi'iaka, the gifted one, in the bosom of Pele

12. I hiki mai ai
    They have arrived.

Pualani Kanahele provides the following interpretation of this chant:

The arrival of the Pele clan to Hawai'i and the deep sense of belonging to this island prompts this chant from Pele. She looks back over the cluster of islands to the north-west of Hawai'i and bids farewell to them. The important information found in this chant and not found in other Pele migration chants are the names of the principal travelers belonging to this clan. The three kaikunane, or brothers, are of Kane descent.

Kamohoali'i, also known as Kanemohoali'i, is the shark, he is the foundation upon which Pele builds. He is the exposed foundation or precipice and the navigator of Hunuaiakaea the voyaging canoe of the Pele clan. Kanemiloha'i, another champion and kunane of Pele, is the steersman of the canoe and is said to preside over Kamokupapapa or the low laying north-west islands of this archipelago. The younger kunane is Kaneapua is descried in many different mo'olelo. He has the leading role in the story of Wahanui which takes place on the island of Lana'i. During the migration of the Pele clan he is left back on the island of Nihoa by Kamohoali'i and is then rescued by his family.

The heroines are Pele and Hi'iaka. This chant shows a definite intent by Pele to establish her domain on Hawai'i during her southeast trek.

"Ke one lau'ena a Kane"
"The rich, fertile land of Kane"

This Hawaiian proverb, was interpreted by Mary Kawena Pukui as a reference to how Puna was a beautiful and fertile land loved by the god Kane. According to Pukui, Pele changed it into a land of lava beds, cinder, and rock when she settled there from Kahiki (Pukui, 1983, #1777).

The legends, myths, and chants which describe the early development of the Puna district relate the dynamic interplay between the deities of the Pele fire clan and the deities honored by other Hawaiian families as their ancestors. Each of the deities represent different elemental forces in the natural landscape of the Puna district. Throughout all of the folklore for Puna, Pele and her family of deities emerge as the natural primal elements

which dominate and shape the lives of the chiefs and the people of Puna. The cosmology, beliefs, customs, and practices sacred to Pele, which are honored by the generations of descendants who trace their genealogies to the fire clan of Puna and Ka'u will be discussed in a special section of this ethnographic study. However, here are two traditional mo'olelo (historical accounts) which relate the conflict between Pele, of the volcanic fire and deities representing other natural elements in Puna, the mo'o or dragon lizards who dwelt in mountain pools and shoreline ponds before the Pele clan came to Hawai'i and the pig god which dwelt in the older growth forests. The volcanic deity conquers the mo'o but reaches a compromise with the pig god.

The Legend of Pele, Waka the mo'o and their husband Puna-'ai-koa'e

It is said by the ancients in their legends that Ka-'u and Puna were beautiful lands without lava beds, and that there was only earth from one end to the other . . . It was said that a very long sandy stretch called Ke-one-lau-ena-a-Kane (Kane's great sand stretch) was found in the district of Puna. That was before the lava destroyed and changed Puna and Waiakea into a land of lava rocks.

Waka-ke-aka-i-ka-wai and Puna-'ai-koa'e were destroyed by Pele of the eternal fires. It was said in this legend by the ancients that this fight between these wondrous supernatural beings went on from Punalu'u in Ka-'u to Puna and to Waiakea in Hilo. This caused the long, long stretch of sand which extended from Waiakea, Hilo to Panau in Puna, called Ke-one-lau'ena-a-Kane, to be covered with lava. Because Waka ran thither, most of the land of Puna became covered with rough and smooth lava to this day. Thus did this famous stretch of sand disappear but traces of it can be seen through small holes here and there all the way from Waiakea to Puna[6].

Pele and Kamapua'a

Kamapua'a comes to the crater of Halema'uma'u and, appearing upon the point sacred to Pele, woos the goddess in the form of a handsome man. Here sisters attract her attention to him. She refuses him with insult, calling him "a pig and the son of a pig." His love songs change to taunts and the two engage in a contest of insulting words. He attempts to approach her, ut she sends her flames over him. Each summons his gods. Pele's brothers encompass him "above and below" and would have smothered him had not his love-making

but

6 Excerpt from: A Legend told by Moses Manu, Ka Loea Kalai'aina, May 1899 - Feb. 1900, translated by Mary Kawena Pukui, in Dorothy Barrere, "Political History of Puna," manuscript for Archaeology Reconnaissance of the Kalapana Extension by Bishop Museum, 1959.

god lured them away at sight of a woman. Kamapua'a threatens to put out the fires of the pit with deluges of water. but Pele's uncles. brothers. and the fire tender Lono-makua keep them burning and again the hog-man's life is in danger. His sister. chiefess of Makahanaloa. comes to his aid with fog and rain. Hogs run all over the place. The pit fills with water. The love-making god sees that if Pele is destroyed Kamapua'a will be the looser. The fires area all out. only the fire sticks remain. These the god saves. Pele yields. and Kamapua'a has his way with her. They divide the districts between them. Pele taking Puna. Ka-u. and Kona (districts periodically overrun with lava flows) and Kamapua'a ruling Kohala. Hamakua Hilo (the windward districts. always moist with rain) (Beckwith. 1976; Kahiolo, 1978).

Excerpts from the version by Kahiolo describe the struggle between Pele and Kamapua'a and reveal his various body forms:

> There was no mercy in Pele as she ordered Lonomakua. "Fire!" The fire roared up and reached Kamapuaa above. It singed his bristles. the stench of which overwhelmed the islands . . . Thinking that Kamapua'a was dead. (Kamapuaa had put himself into his tree body), the Hiiaka sisters stopped running when they reach Halamaumau. Pele asked, "What is this. your running here?" "What indeed! A tree fell down from up high. We barely escaped." Pele responded. "The bodies of Kamapuaa in the forest are the kukui. the amaumau. the hala uhaloa, the olomea, and so forth." Pele ordered Lonomakua. "Fire!" The fire came up with such force that his tree bodies were destroyed. not even rubbish remained. The fire rose up and reached them above. Kilauea was burning everywhere. Since the gods saw that there was no place to escape, Kamapuaa was led up to the top of a cloud and placed there. This was the hog cloud spoken of (Kahiolo, 1978).

Earliest Settlement

The precontact period in Hawai'i may be more easily understood if broken into periods. Research by archaeologists, anthropologists and ethnographers over the past thirty years suggest that the pre-contact period be looked at in five distinct eras[7].

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7 These periods are discussed and summarized by Kirch, Patrick V. in Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory. Honolulu: UH Press, 1985. It is also discussed by Malcolm Naea Chun and Matthew Spriggs in "New Terms Suggested For Early Hawaiian History", Ka Wai Ola O OHA, February 1987, p. 4. Other sources for dating these periods are Fornander, Abraham, Fornander Collection of Hawaiian Antiquities and Folk-Lore. Honolulu: T.G. Thrum (ed.). BPBM Memoirs 4,5,6, 1916 - 1920; Beckwith, Martha W., Hawaiian Mythology. Honolulu: UH Press, 1970; Kamakau, Samuel, Ruling Chiefs of Hawaii. Honolulu:

The first period dates between 0 and 600 A.D. Based on current subsurface archaeological research on each of the islands, the dates for settlements being established on the various islands are continually being adjusted to reflect evidence of settlement earlier and earlier within this period. The archaeology report for this study by Greg C. Burtchard sets the dates for the earliest settlement of Puna between 300 A.D. and 600 A.D. However, as the report notes, very little subsurface excavation has been conducted in the Puna district. As study of the area expands, it is possible that the date for earliest settlement could be revised. Settlements in Puna would have first developed along the shoreline where families would have access to the ocean, fresh water springs, as well as arable lands.

Continued Settlement And Gradual Expansion

While migrations from Polynesia, particularly the Marquesas continued through the next period between 600 and 1100 A.D. the population in the Hawaiian islands primarily expanded from natural internal growth during this period. Clearly, by 1100 A.D. the existing inhabitants of the Hawaiian islands, shared common ancestors and a common heritage. Moreover, they had developed a Hawaiian culture and language uniquely adapted to the islands of Hawai'i which was distinct from that of other Polynesian peoples.

The social system was communal and organized around subsistence production to sustain 'ohana, large extended families. Hawaiian spiritual beliefs, customs, and practices focused on maintaining harmonious and nurturing relationships to the various life forces, elements and beings of nature as ancestral spirits who were honored as deities. Land and natural resources were not privately owned. Rather, the Hawaiian people maintained a communal stewardship over the land, ocean and all of the natural resources of the islands. The kupuna (elders) provided leadership and guidance, to the makua (adults) who performed most of the daily productive work of fishing, cultivation, and gathering. Between the islands of Hawai'i there was some variation of language dialect and names for plants, animals, rains and winds. There were also variations in physical structures, subsistence techniques and art forms. Origin myths varied according to the particular migration and genealogical line from which families descended. The prominence of akua and kupua also varied by island. For example, as discussed above, the Pele fire clan were prominent in Puna and Ka'u. However, qualitatively, the language, culture, social system and spiritual beliefs, customs and practices were common among all the inhabitants of the islands.

Kamehameha Schools Press, 1961; Kamakau, Samuel, Ka Po'e Kahiko: The People of Old. BPBM Spec. Publ. 51., 1964; Kamakau, Samuel, The Works of the People of Old. BPBM Spec. Publ. 61, 1976. Kalakaua, David, King of Hawaii, The Legends and Myths of Hawaii: The Fables and Folklore of a Strange People. Tokyo & Rutland: Charles E. Tuttle, 1973.

Legends, possibly set in this era, document the trials of Puna chiefs and their followers with Pele, the fiery tempered volcano goddess. Chief Kanuha of Kona shared the legend of Puna chief Keliikuku with French explorer Jules Remy (Remy, 1868). The legend of how the young chief Kahawaii and his hula students perish after rebuffing a challenge from Pele to compete at holua (mountain surfboard) sledding is related in many sources[8].

The Legend of Keliikuku

According to common tradition the district of Puna was, until two centuries ago, a magnificent country, possessing a sandy soil it is true, but one very favorable to vegetation, and with smooth even roads. The Hawaiians of our day hold a tradition from their ancestors, that their great grandparents beheld the advent of volcanic floods in Puna. Here in brief is the tradition as it is preserved by the natives.

This high chief reigned in Puna. He journeyed to the island of Oahu. There he met a prophet of Kauai, named Kaneakalau, who asked him who he was. "I am, replied the chief, Keliikuku of Puna." The prophet then asked him what sort of country he possessed. The chief said: "My country is charming, everything is found there in abundance, everywhere are sandy plains which produce marvelously." "Alas! replied the prophet; go, return to your beautiful country, you will find it overthrown, abominable. Pele has made of it a heap of ruins; the trees of the mountains have descended towards the sea, the ohia and pandanus are on the shore. Your country is no longer habitable." The chief made answer: "Prophet of evil, if what you now tell me is true you shall live; but if, when I return to my country, I prove the falsity of your predictions, I will come back on purpose and you shall die by my hand."

Unable, in spite of his incredulity, to forget this terrible prophecy, Keliikuku set sail for Hawaii. He reached Hamakua and, landing, travelled home by short stages. From the heights of Hilo at the village of Makahanaloa, he beheld in the distance all his province overwhelmed in chaotic ruin, a prey to fire and smoke. In despair, the unfortunate chief hung himself on the very spot where he first discovered this sad spectacle.

This tradition of the mountain of Keliikuku and Kaneakalau is still changed by the kanakas. It was reduced to meter and sung by the ancients. It is passing away in our day, and in a few years no trace of it will remain. Whether the prediction was made or not, the

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8 William Ellis, A Narrative of a Tour Through Hawaii . . . With Remarks on the History, Traditions, Manners, Customs, and Language of the Inhabitants, London, 1827; reprint __. His Hawaiian Majesty King David Kalakaua, The Legends and Myths of Hawai'i: The Fables and Folk-Lore of a Strange People, New York: 1888, reprint Tokyo: 1973. Mary Kawena Pukui, Pikoi, ______.

fact is that Puna has been ravaged by volcanic action.

Kahawali and Pele

The handsome young chief Kahawaii lives near Kapoho in Puna district on Hawaii in the days of Kahoukapu the chief. He has a wife and two children named Paupouiu and Kaohe, a mother living at Kuki'i, and a sister Koae at Kula. His father and another sister named Kane-wahine-keaho live on Oahu. Kahawali is an expert in the hula dance and in riding the holua. At the time of the Lono festival, when the hula pupils have gathered for a public appearance, a sled race is arranged with his friend Ahua. Pele in the guise of an old woman offers to compete with him. Angry at the chief's rebuff, she pursues him down the hill in fire form. He flees first to the hill Pu'ukea, then hastens to bid goodby to his wife and children, pauses to say farewell to his favorite pig Aloi-pua'a, and has just time to greet his sister at Kula before escaping to the sea in a canoe which his brother has opportunely brought to land. 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 introduced as a group of hula pupils caught in the trail of Pele's wrath (Beckwith, 1976).

Migration, Ruling Chiefs And 'Ohana

The third period, between 1100 and 1400 A.D. marks the era of the long voyages between Hawai'i and Tahiti and the introduction of major changes in the social system of the Hawaiian people's nation. The chants, myths and legends record the voyages of great Polynesian chiefs and priests, such as the high priest Pa'ao, the ali'i nui Mo'ikeha and his sons Kiha and La'amaikahiki, and high chief Hawai'i Loa. Traditional chants and myths describe how these new Polynesian chiefs and their sons and daughters gradually appropriated the rule over the land from the original inhabitants through intermarriage, battles and ritual sacrifices. The high priest Pa'ao introduced a new religious system that used human sacrifice, feathered images and walled-in heiau. The migration coincided also with a period of rapid internal population growth. Remnant structures and artifacts dating to this time suggest that previously uninhabited leeward areas were settled during this period.

For the period of the Tahitian migration and ascendancy in Hawai'i island between 1100 and 1300 A.D., Puna is prominent in legends as the district where the high priest Pa'ao made his first landfall and built the heiau (temple) for his god which is today called Wahaula. Hawaiian historian Samuel Kamakau provides the following brief account:

> Puna on Hawai'i island was the land first reached by Pa'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, Pa'ao went on to land in Kohala, at Pu'uepa. He built a heiau there, called Mo'okini, a luakini (Kamakau, 1991).

Pa'ao, according to Hawaiian oral tradition, was a powerful priest and prophet. According to Kamakau he originated from Wawau and 'Upolu, lands of the mythical Polynesian homeland, Kahiki[9]. In Hawai'i he established a new order of religious priesthood and practices which included human sacrifices at the luakini heiau whose form of construction he introduced into Hawai'i. The priesthood of Pa'ao's served the ruling chiefs of Hawai'i, until the time of Hewahewa, high priest of King Kamehameha I and II who collaborated with Kamehameha II in the abolition of the traditional chiefly kapu (system of sacred rituals and restrictions) in 1819.

Abraham Fornander in An Account of the Polynesian Race, gives the following description of Waha'ula heiau:

> It was built in the quadrangular or parallelogram form which characterized all the Heiaus built under and after the religious regime introduced by Paao, and in its enclosure was a sacred grove, said to have contained one or more specimens of every tree growing on the Hawaiian group, a considerable number of which, or perhaps their descendants, had survived when last the author visited the place in 1869 (Fornander, 1880).

According to Kamakau Hawai'i island was without a chief when Pa'ao arrived in Hawai'i. Evidently the chiefs of Hawai'i were considered ali'i maka'ainana or just commoners, maka'ainana during that time (Kamakau, 1991). Pa'ao sent back to Tahiti for a new ruler for Hawai'i, thereby ushering a new era of ruling chiefs and kahuna (priests) in Hawaiian archipelago. The new ruler was Pili-ka'aiea from whom King Kamehameha I eventually descended. Kamakau, Fornander and Thrum placed Pa'ao in the 11th century, sixteen generations from Heleipawa. Bruce Cartwright in "Some Aliis of the Migratory Period"places Pili, the chief brought to Hawai'i by Pa'ao, in the 25th generation before 1900, i.e. 1275 A.D. (Barrere, 1959; Cartwright, 1933).

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9 Martha Beckwith, 1976, p. 370 wrote, Tradition ascribes to Paao the introduction of human sacrifice into the temple ritual, the walled heiau, and the red-feather girdle as a sign of rank; all typical, says Handy, of late Tahitian culture and not found in Samoa. Other institutions ascribed to him are the puloulo'u tapu sign, the prostrating tapu (tapu moe or -o), and the feather god Kaili; some would call Paao rather than La'a-ai-kahiki the introducer of image worship . . . That Paao took his ideas from Tahiti is further indicated by reference to "Vavau" and "Upolo" as places where he owned land, probably in districts so named in northern Tahiti in the Aha-roa division of that island, and the name Aha-ula (later called Waha-ula) for the first heiau erected by his party on Hawai'i suggests such a connection.

In the migration legend of Mo'ikeha to Hawai'i his party first touched at the easternmost point of Hawai'i, cape Kumukahi, and the younger brothers of Moikeha, Kumukahi and Ha'eha'e remained in Puna. Among the others in his family, the kahuna Mo'okini and Ka-lua-wilinau made their home at Kohala; Honua-ula landed in Hana on Maui; the sisters Makapu'u and Makaaoa landed on O'ahu. The rest of the party went on to Kaua'i.

In the Kumuhonua legend which records the migration of Hawai'i-loa, also known as Ke-kowa-i-Hawai'i, his grandson is born in Puna. Hawai'i-loa, his family, and his followers migrate to Hawai'i. He alone takes his wife and children and are ascribed as being the ancestors of the Hawaiian people. He named the island of Hawai'i after himself, the other islands after his children, and various land divisions after his navigators who sailed with him. From time to time he voyages south to bring back mates for his children out of the family of his brother Ki. He brings Ki's oldest son Tu-nui-ai-a-te-atua as husband for his favorite daughter Oahu. Their son Tu-nui-atea is born at Keauhou on Hawai'i. Hawai'i Loa names the district of Puna for the birthplace of his nephew Tu-nui-ai-a-te-atua, Puna-auia, in Tahiti (Beckwith, 1976, 363 - 370).

Ruling Chiefs Of Puna

The fourth period dates from 1400 through 1600. Voyaging between Hawai'i and Tahiti ended. As a result of the external influences introduced by the migrating Polynesian chiefs and priests and internal developments related to the geometric growth of the population, sophisticated innovations in cultivation, irrigation, aquaculture and fishing were implemented. These innovations were applied in the construction of major fishponds, irrigation systems and field cultivation systems. Such advances resulted in the production of a food surplus which sustained the developing stratification of Hawaiian society into three basic classes - ali'i the chiefs, kahuna the priests, and maka'ainana the commoners. Oral traditions relate stories of warring chiefs, battles, and conquest resulting in the emergence of the great ruling chiefs who controlled entire islands, rather than portions of islands. These ruling chiefs organized great public works projects that are still evident today. For example, 'Umi-A-Liloa constructed taro terraces, irrigation systems, and heiau throughout Hawai'i island, including the Pu'uhonua at Kealakekua.

Although the common people provided food, barkcloth, and household implements to the chiefs, Hawaiian society remained predominantly a subsistence agricultural economy. There is no evidence of a money system or commodity production. A system of barter in essential goods between fishermen, mountain dwellers and taro cultivators existed within the framework of the extended family unit called 'ohana. In general, this exchange within the 'ohana functioned primarily to facilitate the sharing of what had been produced upon the 'ili or extensive land grant that the 'ohana held and worked upon in common.

Mary Kawena Pukui and E.S. Craighill Handy in The Polynesian Family System in Ka-'u, Hawai'i describe this as follows:

> "Between households within the *'ohana* there was constant sharing and exchange of foods and of utilitarian articles and also of services, not in barter but as voluntary (though decidedly obligatory) giving. *'Ohana* living inland (*ko kula uka*), raising taro, bananas, wauke (for tapa, or barkcloth, making) and *olona* (for its fibre), and needing gourds, coconuts and marine foods, would take a gift to some *'ohana* living near the shore (*ko kula kai*) and in return would receive fish or whatever was needed. The fisherman needing *poi* or *'awa* would take fish, squid or lobster upland to a household known to have taro, and would return with his *kalo* (taro) or *pa'i'ai* (hard *poi*, the steamed and pounded taro corm). . . In other words, it was the *'ohana* that constituted the community within which the economic life moved (Handy & Pukui, 1958).

Cultivation of taro and fishing were the centerpieces of the material culture. The system of irrigation, fishing and aquaculture was highly developed and produced a surplus that sustained a relatively developed and unified social structure that was embraced throughout the whole archipelago. All the basic necessities of life came from plants. Even fishing relied on plants--the canoe was made from a hardwood tree: the net was woven out of olona or some other vine; spears were carved out of a hardwood tree; ropes were woven from the coconut husk or a vine, the sails were usually made of lauhala (pandanus leaves). Hawaiians could not have survived without plants and Hawaiians were expert planters and cultivators.

By contact, the Hawaiian economy supported between 400,000 and 800,00 people[10]. The social system consisted of the 'ohana who lived and worked upon communally held portions of land called 'ili within the ahupua'a natural resource system. These families - - the building blocks of the Hawaiian social system--were ruled over by the stewards of the land - - the chiefs along with their retainers and priests.

Even during this period of chiefly rule, land in Hawai'i was still not privately owned. The chiefly class which provided stewardship over the land, divided and re-divided control over the districts of the islands among themselves through war and succession. A single chief could control a major section of an island, a whole island or several islands depending upon his military power. Up until the time of Kamehameha I, however, no one chief was

10 Estimate from Cook's voyage was 400,000 (cite) Recent studies by David Stannard place the pre-contact population as high as 800,000. See Before the Horror. Honolulu: UH Press, 1989.

ever paramount over all of the islands[11].

The chief divided his landholdings among lesser ranking chiefs who were called konohiki. The konohiki functioned as supervisors on behalf of the chief over the people that lived on the lands and cultivated them. The tenure of a konohiki was dependent upon his benefactor. the chief. Konohiki were often related to the chief and were allocated land in recognition of loyal or outstanding service to him. However, unlike elsewhere in Polynesia. the konohiki were rarely related to the maka'ainana or commoners on the land under his supervision (Earle. ; Ralston. 1984). Thus, the konohiki represented the collective interest of the ali'i class over the maka'ainana as well as the individual interest of his patron chief.

The lands allocated to the konohiki were called ahupua'a. Ahupua'a boundaries coincided with the geographic features of a valley. They ran from the mountain to the ocean, were watered by a stream and were bounded on both sides by mountain ridges. It afforded the 'ohana who lived in the ahupua'a access to the basic necessities of life - marine foods from ocean reefs and streams. low lying wetlands for taro, fresh water, timber, and medicinal plants from the forest. The use rights of the konohiki including fishing rights over shoreline fishponds and reefs.

The konohiki supervised all productive communal labor within the ahupua'a month - to - month and season - to - season. He collected the annual tribute and determined if it was sufficient in relation to the productivity of the land. He regulated the use of land and ocean resources, administering the kanawai applying to the use of irrigated water as well as to fishing rights in the ocean. The konohiki was responsible for organizing communal labor for public works projects such as roads, fishponds and irrigation systems.

The ahupua'a of the konohiki were further divided into strips of land called 'ili which were allocated either by the chief or konohiki to the commoner Hawaiians called maka'ainana. However, these land grants were given to specific extended family units of maka'ainana called 'ohana. These 'ili either extended continuously from the mountain to the ocean or were comprised of separate plots of land located in each of the distinct resource zones of the ahupua'a. In this way an 'ohana was provided access to all of the resources necessary for survival -- vines, timber, thatch from mountain areas; sloping land for sweet potatoes and crops that require higher altitudes; low lying lands irrigated by stream waters; and ocean areas for fish, limpids, crustaceans and seaweed, the principal

11 At the time of Cook, Kalaniopu'u controlled Hawai'i island, Kahekili controlled Maui, O'ahu, Moloka'i, Lana'i, Kaho'olawe, Kaua'i and Ni'ihau.

source of protein for Hawaiians (Handy & Pukui, 1972)[12].

The tenure of the maka'ainana on the land was stable, unlike that of the ali'i and the konohiki. There were two Hawaiian sayings that illustrated this principle. The first saying "Ko luna pohaku no ke ka'a i lalo, 'a'ole hiki i ko lalo pohaku ke ka'a" translates as, "A stone that is high up can roll down, but a stone that is down cannot roll" (Pukui, 1983). In other words, the chief and his retainers including the konohiki could be overthrown and lose their positions of influence . A chief could be defeated in war and lose his lands. When a chief died and a new chief succeeded him, the lands were re-distributed and the previous chief's konohiki could be displaced. However, the common people who lived on the land from the days of their ancestors were stable on the land. They were not displaced when the chief or konohiki over them changed. They continued to live on and cultivate the land of their 'ili from one chief to the next.

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12 The traditional Hawaiian land divisions according to Malo (1951:16-18) consist of the following district, subdistricts, land divisions and land parcels:

- island: *Moku-puni* (cut off surrounded).
- Large District: *Apana* (pieces) or *Moku-o-loko* (interior division), e.g. Hana.
- Sections: *'Okana* or *Kalana*, e.g. Honua'ula. [*'Okana* is also a district or sub-district and usually comprising several *ahupua'a*; *Kalana* is smaller than a district (Pukui & Elbert 1971: 113, 258).]
- Subsection within *'Okana*: *Poko*. [Dividing a District, or *ahupua'a* into two or more sections, e.g.: Hamakua Poko; Hamakua Loa]
- *Ahupua'a*.(running *mauka-makai*, from the mountains to the sea) [a sub-district land division, some contain a few hundred acres, others 10,000 acres, or more]
- *'Ili-'aina* [*'Ili-'aina*, a sub-division of an *ahupua'a*; *'ili lele*, a discontinuous *'ili-'aina*, consisting of two or more parcels of land in the same *ahupua'a* and having the same name]
- *Mo'o-'aina* [*mo'o-'aina* is a cultivated garden within an *'ili-'aina* or *'ili-lele*]
- *Pauku-'aina* (joints of lands) [*pauku-'aina* is a land section smaller than a *mo'o-'aina*]
- *Kihapai* (patches or farms) [dry land garden]
- *Ko'ele* [*ko'ele*, a cultivated garden, the produce of which went to the *ali'i* of the district or island]
- *Hakuone* (land cultivated by *'ohana* with crops going to *konohiki)* [produce of which went to chief of the *ahupua'a*]
- *Kuakua* (broad *kuauna* or *kuaauna*, an embankment) [embankments between wet taro gardens, usually cultivated] (Malo 1951: 16-18). Information in brackets [ ] added.

The second saying illustrating the stable tenure of the maka'ainana on the land, "I 'aina no ka 'aina i ke ali'i, ai waiwai no ka 'aina i ke kanaka," translates as, "The land remains the land because of the chiefs, and prosperity comes to the land because of the common people" (Pukui, 1983). In other words, the chiefs held the land, but the common people worked the land and made it valuable.

While the tenure of the maka'ainana was stable, they were not tied to the land and did have the option to move away if they chose to. There is little evidence however that moving off the land of one's birth was ever a common practice.

The maka'ainana produced all the necessities of life for their extended families from the 'ili that was allotted to them. In addition to cultivating plots for the subsistence of their 'ohana, the maka'ainana were obligated to keep the plots of land set aside for the konohiki and chiefs cultivated in food crops. These plots were called haku one and koele, respectively. The common people were also required to provide the chiefs and konohiki with an annual ho'okupu or tribute that included food and all types of household needs, such as tapa cloth and woven mats to stone and wooden containers and implements as well as feathers to make cloaks and helmets that were symbols of the ali'i rank. In addition to the annual requirements, the maka'ainana were obligated to provide labor service and products from the land upon the request of the chief or konohiki. It was the labor of the maka'ainana that supported the entire society; however the ali'i enjoyed full appropriation rights over all that was produced upon his land grants.

Among the maka'ainana there was cooperative labor and sharing of the fruits of the labor. Most of this sharing was done within the context of the 'ohana as the primary unit of production. The 'ohana lived in dispersed clusters of households called kauhale on the 'ili land granted to them. They did not congregate in villages as is common in other areas of the Pacific. Between the 'ohana there was also cooperative enterprise and reciprocal exchange of labor service called kokua. This was practiced in the undertaking of major projects such as the chopping down, hewing out and hauling of a log for a canoe or the construction and thatching of a house structure. These type of projects required the labor of more people than comprised one single 'ohana. In addition, all of the 'ohana within an ahupua'a could be organized to do massive public works projects under the supervision of the konohiki. This included construction and maintenance of the irrigation systems and the fishponds.

Although the chiefs and their konohiki had full appropriation rights over the land and the people, in the main this was a system of mutual obligation and benefit between the chiefs and the people.* The chiefs controlled the land and distributed it among the maka'ainana. The chief was required to manage and oversee the production on the land. He regulated the use of scarce resources; apportioned these resources among the people according to principles of fair usage; regulated the use of the water which was the most valued resource of the land; assured that the irrigation system was properly maintained; conducted proper rituals to the gods who controlled nature; and he conserved the resources

of the land through restriction and replacement policies. In return, the maka'ainana were obliged to provide labor service and products of the land to the chiefs and konohiki.

While Hawaiian tradition records cases of arbitrary, irresponsible and self-serving chiefs who abused the people, they were clearly exceptional cases and were quickly replaced with responsible chiefs who cared for the well-being of the people (Kamakau, 1961; Kelly 1980).

The Hawaiian proverb, "I ali'i no ali'i no na kanaka," or "A chief is a chief because of the people," reflects the Hawaiian attitude that the greatness of a chief was judged according to the welfare of the people under him (Pukui, 1983).

The Hawaiian historian David Malo wrote, "In former times, before Kamehameha, the chiefs took great care of their people. That was their appropriate business, to seek the comfort and welfare of the people, for a chief was called great in proportion to the number of his people . . ." (Malo, 1839). In his book, Hawaiian Antiquities, Malo described the type of training given to young chiefs who were destined to rule:

> It was the policy of the government to place the chiefs who were destined to rule, while they were still young, with wise persons, that they might be instructed by skilled teachers in the principles of government, be taught the art of war, and be made to acquire personal skill and bravery. The young man had first to be subject to another chief, that he might be disciplined and have experience of poverty, hunger, want and hardship, and by reflecting on these things learn to care for the common people, and at the same time pay due respect to the ceremonies of religion and the worship of gods to live temperately, not violating virgins . . . conducting the government kindly to all. (Malo, 1971)

"Hilina'i Puna, kalele ia Ka'u" / "Puna leans and reclines on Ka'u" refers to the common origin of the people of Puna and Ka'u. 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'u referred to themselves as the Makaha meaning fierce, savage, ferocious. Those in Puna called themselves Kumakaha or standing fierce, savage, ferocious. Both names are related in chants of the chiefs of Puna and Ka'u (Pukui, 1983). Again referring to the common origins of the Makaha of Ka'u and the Kumakaha of Puna is the rallying call, "E ala e Ka'u, Kahiko o Makaha; e ala e Puna, Puna Kumakaha; e ala e Hilo, na'au kele!" / "Arise, O Ka'u of ancient fierce descent; arise o Puna stand fierce; arise, O Hilo of the water-soaked foundation" (Pukui, 1983). The distinction among the families of Ka'u and Puna possibly occurred during this period.

Puna's political history throughout this period is bound up with the fortunes of the ruling families of Hilo and Ka'u. No one single family emerges upon whose support one or

another of the chiefs seeking power had to depend upon for his success. Thus, the political control of Puna did not rest upon conquering Puna itself, but rather upon control of the neighboring districts of Ka'u and Hilo (Barrere, 1959).

Nevertheless, there are two notable Puna chiefs in this era, Hua'a and 'Imaikalani, who are identified as enemies of high chief 'Umi-a-Liloa are killed by him and his warriors.

During the time of high chief Liloa, approximately 1475 A.D., the chiefs of the six districts of Hawai'i, including Puna, were autonomous within their own districts, but they acknowledged Liloa as their paramount chief. Hakau, son of the sacred wife of Liloa succeeded him. According to Kamakau, Hakau failed to look after the well-being of the people under him,

> But in the later years of his rule he was lost in pleasure, mistreated the chiefs, beat those who were not guilty of any wrongdoing, and abused the priests of the heiaus of his god and the chiefs of his own government (Kamakau, 1992).

The chiefs and priests conspired with 'Umi-a-Liloa, Hakau's half-brother, and killed Hakau. Hakau's death left 'Umi in possession of Hamakua. The chiefs of the remaining districts of Hawai'i declared themselves to be independent of 'Umi. 'Umi conquered those chiefs who resisted him and reunited the districts of the entire island under his rule. According to Kamakau, Hua-'a, the chief of Puna was conquered by 'Umi-a-Liloa,

> 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 counsellors during 'Umi's reign over the kingdom of Hawai'i. 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).

'Imaikalani is the first chief of Ka'u who is said to have control over parts of Puna. In the time of 'Umi-a-Liloa, circa 1500 A.D. he reconditioned the heiau of Waha'ula. This is an indication that he held supreme authority over the ahupua'a of Pulama in Puna. He was a chief of power and prestige, found on several chiefly genealogies, including that of Queen Emma. According to Barrere, 'Imaikalani may well have been one of the chiefly ancestors of the Makaha and Kumakaha lines of Ka'u and Puna. (Barrere, 1959)

Kamakau provided the following account of the conquest of chief 'Imaikalani by 'Umi warrior, Pi'imaiwa'a:

> 'Umi-a-Liloa feared I-mai-ka-lani. Although he was blind and unable to see, his hearing was keen. 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. . . 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. . . 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 (Kamakau, 1992).

Kahalemilo, son of 'Imaikalani and Lililehua, son of Hua-'a were both killed by 'Umi's son, Keawe-nui-a-'Umi, who gained control of Hawai'i island in the next generation. According to Barrere, this seems to have extinguished both their lines as autonomous chiefs of Ka'u and Puna. Ka'u is ruled by the Kona chiefs which stemmed by Keawe-ui-a-'Umi and all of Puna is linked with Ka'u until the time of Keawe-i-kekahi-ali'i-o-ka-moku, when the I family of Hilo controlled parts of Puna. The other part is not mentioned specifically, but the inference is that it was still linked with Ka'u (Barrere, 1959).

The Eve Of European Contact

On the eve of European contact, Puna seemed to have enjoyed a brief resurgence of semi-autonomous rule. Two generations after Keawe, in the time of Kalani'opu'u, I-maka-koloa became powerful enough to warrant the wrath of high chief Kalaniopu'u.

'Imakakoloa was probably a descendant of 'Imaikalani through the 'I family of whom he was an ancestor. Kalaniopu'u, having gained control of all Hawai'i, found his latter days troubled by suspected rebellion in Puna and Ka'u. Kamakau gave the following account:

> Meanwhile rebellion was brewing. 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 mamaki bark, fine mats made of young pandanus blossoms ('ahu hinano), mats made of young pandanus leaves ('ahuao), and feathers of the 'o'o and mamo birds of Puna.
>
> Nu'u-anu-pa'ahu, chief of Ka'u, was also in the plot to rebel, but he was at this time with Ka-lani-opu'u, and Ka-lani-opu'u feared Nu'u-anu-'opu'u (Kamakau, 1992).

Kalaniopu'u first disposed of Nu'uanupa'ahu by conspiring with his kahuna to have a shark devour him. Although Nu'uanupa'ahu successfully killed the attacking sharks, he died from the mortal wounds that he sustained in the struggle with them (Kamakau, 1992). After disposing of Nu'uanupa'ahu, Kalani'opu'u hunted down 'Imakakoloa. Kamakau, again, offers an account:

> 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 . . . the fight lasted a long time, but I-maka-koloa fled and for almost a year lay hidden by the people of Puna. . . '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 fires. When one district (ahupua'a) had been burnt out from upland to sea he moved on to the next . . . 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. . . 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. . . 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).

The stage was therefore set for the usurpation of Kiwala'o as heir to his father, high chief Kalani'opu'u, by Kamehameha, in the period after European contact.

Contact and Monarchy

The fragile system of checks and balances between the common people and ruling class which developed during the latter stage of Hawai'i's pre-European contact history functioned efficiently so long as the interest and values of both classes remained in basic harmony. However, to the extent that Hawaiian society had evolved into a socially and economically stratified system by 1600, there was always inherent in this system the threat of dissolution of the bonds that tied commoners and ruling chiefs together.

The responses of the Hawaiian people to contact and change after 1778 were divergent and largely influenced by the individual social and economic role they played in the society. The acceptance or rejection of Western culture was largely the prerogative of the ruling class of ali'i. The common people did not play a major role in determining the political and economic future of Hawai'i. Instead, the Hawaiian social system assigned the ali'i the lead role. In exercising this role, their response to foreign interests and foreign powers further distanced them from the common people, who were left with the problem of trying to survive the burdens of contact - war, disease, and depopulation.

David Samwell, a surgeon and Lt. King, British officers on the Cook voyage provided the first written accounts of Puna. King wrote:

On the southwest extremity of Opoona the hills rise abruptly from the sea side, leaving but a narrow border, and although the sides of the hills have a fine verdure, yet they do not seem cultivated (Cook/Beaglehole, 1967).

Samwell observed:

> Many people collected on the Beach to look at the Ship . . . may canoes came off to us . . . [with] a great number of beautiful young women.

Soon after Kalani'opu'u died in 1782, Kiwala'o was killed by the forces of Kamehameha in the battle of Moku'ohai. For the next 10 years. Kamehameha fought the chiefs of Hawai'i for control of the island. The districts of Kona. Kohala and portions of Hamakua acknowledged Kamehameha as their ruler. Hilo, the remaining portion of Hamakua and a part of Puna acknowledged Keawemauhili as their ruling chief. The lower part of Puna and the district of Ka'u supported their chief Keoua. The battles among these three chiefs culminated in the triumph of Kamehameha (Barrere. 1959).

"He moku 'aleuleu"
"District of ragamuffins"

This was a descriptive saying of the followers of Kamehemeha I for the people of Ka'u and Puna. According to Hawaiian scholar Mary Kawena Pukui this was said because the people of these two districts were hard-working farmers, who lived most of the time in old clothes (Pukui, 1983). This saying indicates that the people of Puna were not among those who prospered under the reign of King Kamehameha.

"Lawe li'ili'i ka make a ka Hawaii, lawe nui ka make a ka haole."
"Death by Hawaiians takes a few at a time; death by foreigners takes many."

This proverb meant that diseases known in the islands before the advent of foreigners caused fewer deaths than those that were introduced (Pukui, 1983). One of the most serious impacts of foreign contact was widespread deaths from epidemics. While the epidemics hit the port towns most severely, no district of the islands was spared, including Puna. Kamakau reports on the epidemic in 1804 of ma'i oku'u, (either cholera or bubonic plague) in which half of the population was reported to have succumbed; in 1826 when thousands died of "cough, congested lungs, and sore throat"; in 1844 of colds; in 1848 of measles which carried away a third of the population; in 1853 of smallpox (Kamakau. 1992).

Periodically, the common people also suffered from the famines which gripped the land, as the chiefs gave priority to meeting the needs of the fur and sandalwood traders:

> As the desires of the chiefs and the pressure of the trading captains grew, more and more people were put to the task, fewer and fewer were left for the normal duties of everyday living; in many areas planting and fishing virtually ceased, and for a season thereafter there would be little harvested beyond the needs of the ali'i and their konohiki (supervisors). It was the people who went hungry[13].

13 Handy, 1976, p. 234 - 235.

Upon the death of King Kamehameha I in 1819, those chiefs who were closely allied to him feared a rebellion from rival traditional chiefs. As a means of undermining their rivals, the Council of Chiefs, under the leadership of Mo'i Kamehameha II, Kuhina Nui Ka'ahumanu, and High Chief Kalanimoku instituted the 'Ai Noa or abolition of the state religion. By abolishing the traditional chiefly religion under which rivals could claim rank, prestige, and position, the Kamehameha chiefs consolidated political power under their control.

Although Native Hawaiian religion ceased to have the official sanction of the royal government, Hawaiian spiritual beliefs and customs continued to be honored and practiced in most of the rural communities and settlements of the kingdom. Families continued to honor their 'aumakua (ancestral deities). Traditional kahuna la'au lapa'au (herbal healers) continued their healing practices using native Hawaiian plants and spiritual healing arts. Family burial caves and lava tubes continued to be cared for. The hula and chants continued to be taught, in distinctly private ways. Among the deities who continued to be actively honored, worshipped, thought of and respected, even to the present, was Pele and her family of deities. Every eruption reinforced and validated her existence to her descendants and new generations of followers (Kanahele, 1992).

In 1820, the year following 'Ai Noa, American missionaries began to settle Hawai'i and convert Hawaiians to Christianity. In that same year commercial whaling began to attract increasing numbers of foreign settlers who demanded rights of citizenship and private ownership of land[14].

The first missionary to journey through Puna was William Ellis, in 1823. In his published journal he described the natural resources available to the residents of the district and some of their living conditions, subsistence and exchange practices. He estimated that there were approximately 725 inhabitants at Kaimu and another 2,000 Hawaiians in the immediate vicinity along the coast. At Kauaea, about 3 1/2 miles from Kaimu, he reported that 300 people gathered to hear him preach (Ellis, 1825). The following are excerpts from his journal which describe the diversity of conditions he observed travelling through Puna, from Kilauea through Kealakomo toward Kalapana and over to Kapoho and to finally Keaau:

> Leaving Kearakomo [Kealakomo], we travelled several miles . . . The population of this part of Puna, though somewhat numerous, did not appear to possess the means of subsistence in any great variety or abundance; and we have often been surprised to find the desolate coasts more thickly inhabited

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14. Kamakau, 1961; Ralph S. Kuykendall, The Hawaiian Kingdom, Volume I, 1778 - 1854. Foundation and Transformation, Honolulu: University of Hawai'i Press; 1938; reprint Honolulu: The University Press of Hawai'i, 1980.

than some of the fertile tracts in the interior: a circumstance we can only account for, by supposing that the facilities which the former afforded for fishing, induce the natives to prefer them as places of abode: for they find that where the coast is low, the adjacent water is generally shallow.

We saw several fowls and a few hogs here, but a tolerable number of dogs, and quantities of dried salt fish, principally albicores, and bonitos. This latter article, with their poe [poi] and sweet potatoes, constitutes nearly the entire support of the inhabitants, not only in this vicinity, but on the seacoasts of the north and south parts of the island.

Besides what is reserved for their own subsistence, they cure large quantities as an article of commerce, which they exchange for the vegetable productions of Hiro [Hilo] and Mamakua [Hamakua], or the mamake and other tapas of Ora [Olaa] and the more fertile districts of Hawaii.

When we had passed Punau, Leapuki, and Kamomoa [Panau, Laeapuki and Kamoamoa], the country began to wear a more agreeable aspect. Groves of cocoa-nuts ornamented the projecting points of land, clumps of kou-trees appeared in various directions, and the habitations of the natives were also thickly scattered over the coast. . .

Shortly after, we reached Kupahua, a pleasant village, situated on a rising ground, in the midst of groves of shady trees, and surrounded by a well-cultivated country. . . . .

Kaimu is pleasantly situated near the sea shore, on the S.E. side of the island, standing on a bed of lava considerably decomposed, and covered over with a light and fertile soil. It is adorned with plantations, groves of cocoa-nuts, and clumps of kou-trees. It has a fine sandy beach, where canoes may land with safety; and, according to the houses numbered to-day, contains about 725 inhabitants . . . .

Leaving Kehena, we walked on to Kamaili, a pleasant village, standing in a gently sloping valley, cultivated and shaded by some large cocoa-nut trees.

A most beautiful and romantic landscape presented itself on our left, as we travelled out of Pualaa The lava was covered with a tolerably thick layer of soil, and the verdant plain, extending several miles towards the foot of the mountains, was agreeably diversified by groups of picturesque hills, originally craters, but now clothed with grass, and ornamented with clumps of trees. The natives informed us, that three of these groups, Honuaura, Malama and Mariu [Honua'ula, Malama & Maliu], being contiguous, and joined at their base, arrested the progress of an immense torrent of lava . . . We soon left

this cheerful scenery, and entered a rugged tract of lava, over which we continued our way till about two p.m., when we reached Kapoho.

A cluster, apparently of hills three or four miles round, and as many hundred feet high, with deep indented sides, overhung with trees, and clothed with herbage, standing in the midst of the barren plain of lava, attracted our attention . . . on reaching the summit, were agreeably surprised to behold a charming valley opening before us. It was circular, and open towards the sea. The outer boundary of this natural amphitheater was formed by an uneven ridge of rocks, covered with soil and vegetation. Within these there was a smaller circle of hills, equally verdant, and ornamented with trees. The sides of the valley, which gradually sloped from the foot of the hills, were almost entirely laid out in plantations, and enlivened by the cottages of their proprietors. . .

We reach Kaau [Keaau], the last village in the division of Puna. It was extensive and populous, abounding with well-cultivated plantations of taro, sweet potatoes, and sugar-cane; and probably owes its fertility to a fine rapid stream of water, which, descending from the mountains, runs through it into the sea (Ellis, 1825).

It was not until 1836, that the next missionary, Rev. Titus Coan, travelled through Puna. He preached the word of God to villages throughout the district creating a Christian revivalist atmosphere wherever he went. Following his visit, some of the Puna Hawaiians formed Christian congregations. In the 1840 Annual Station Report for Hilo it was noted that six new "meeting houses" had been built and fifteen congregations were meeting in houses in the districts around Hilo. When Rev. Chester Lyman toured Puna with Lyman in 1846 he described visiting a meeting house in Kamoamoa and a "church" in Kalapana (Langlas, 1990).

In 1840, a catholic priest, Father Walsh was assigned to the island of Hawai'i and in 1841 he baptized Hawaiians in Puna and Ka'u. Soon thereafter a resident priest was assigned to Ka'u and he made periodic visits to Puna. However, it was not until a Belgian priest, Father Damien de Veuster, was assigned to Puna in 1864, that more Hawaiians were baptized into the catholic faith and regular services were held. During the year that he spent there, Father Damien increased the number of catholics in Puna from 350 to 450 and he built several thatched grass churches. Since the time of Father Damien there was a resident priest in Puna and a strong Catholic congregation.

In 1841, Rev. Titus Coan estimated the Hawaiian population of Puna at 4,371. He wrote that most of the inhabitants of Puna lived along the shore, although there were hundreds also scattered inland (Holmes, 1985). In that same year, Capt. Charles Wilkes, of the U.S. Exploring Expedition explored the Kilauea volcano and the East Rift Zone in Puna. He observed agricultural activities in the Puna Forest Reserve in the vicinity of

Kahauale'a. He wrote:

We left Panau after half-past eight o'clock, and passed on towards the east. After traveling about three miles, we came in sight of the ocean, five mile off. Our course now changed to the northeast, and before noon we reached an extensive upland taro-patch . . ." (Wilkes, 1845, p. 181).

In 1846, Chester Lyman traveled through Puna with Rev. Coan and reported on agricultural activity in what was probably the interior of the Puna Forest Reserve near Kahauale'a. He wrote:

Our route from Kahauale'a [village] lay northerly, gradually rising. By half past 2 p.m. we had reached a plantation in an unsettled region where a good old man had been at work all day putting up a small neat house of ti leaves, in expectation that we would stop here for the night. Plantains, pawpaws, taro, etc. were growing around . . . we went on about 5 miles further, or 10 miles from Kahauale'a [village] over an exceeding rough and jagged path and through a dense miry thicket to a small grass shanty (Lyman, 1924, p. 19).

By 1840, King Kamehameha transformed the government into a constitutional monarchy, having signed a Bill of Rights in 1839 and a Constitution for the Kingdom of Hawai'i in the following year. In 1845, despite petitions of protest signed by 5,790 Hawaiians, foreigners were allowed to become naturalized citizens and to hold public office. Ka Mahele (The Land Division) in 1848 established a system of private land ownership which concentrated 99.2 percent of Hawai'i's lands among 245 chiefs, the Crown, and the Government. Less than one percent of the lands were given to 28 percent of the people, leaving 72 percent of the people landless. In 1850, over the protests of Hawaiians, foreigners were given the right to own land. From that point on foreigners, primarily Americans continued to expand their interests, eventually controlling most of the land, sugar plantations, banks, shipping, and commerce of the islands[15].

Puna is distinguished as the district with the least amount of private land awards from the 1848 Mahele and Kuleana Act. Only 19 awards of private land was made in the entire district. Of these, 16 awards were made in large tracts to chiefs and three small parcels were granted to commoners, Baranaba, Hewahewa and Haka. Baranaba, was a school superintendent. Given his position, he was probably aware of the process and had the money needed to conduct the survey. Hewahewa filed for a coffee patch in Hapaiolaa which he had received in 1842. Haka received 6 fields in the 'ili of Pakalua (Allen, 1979).

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15 Kuykendall, 1980. Davianna McGregor, "Voices of Today Echo Voices of the Past" in Malama Hawaiian Land and Water, edited by Dana Naone Hall, Honolulu: Bamboo Ridge Press, 1985.

An examination of the possible reasons why almost the entire population of Puna did not enjoy the benefits of the Mahele and Kuleana Act lends an understanding of why Hawaiians living in the district remained outside of the mainstream of Hawai'i's economic and social development. First, Puna was isolated from the mainstream of economic, social and political developments. It is possible that the Hawaiians in Puna were not aware of the process or did not realize the significance of the new law. Second, it is possible that the Puna Hawaiians did not have a way to raise the cash needed for the land surveys which cost between $6 to $12. Wages at the time were normally between 12 1/2 cents and 33 cents a day. However, there were few wage earning jobs in Puna. Cash would have to be raised from selling extra fish or other products, which was difficult given their subsistence level of living. Third, at least some of the Puna Hawaiians filed their land claims after the deadline. In an 1851 petition to the legislature, several Puna residents asked to be issued land grants without penalty, as they had filed their claims after February 14, 1848 (Allen, 1979).

The bulk of the Puna lands were designated as public lands to either the monarchy, as "crown" land or to the government of the Hawaiian Kingdom[16] (Territory of Hawai'i, 1929). Between 1852 and 1915, 526 land grants and patents were issued in Puna. Out of this number, over half, 275 were issued for Ola'a. It is possible that these grants represent kuleana claims which were not awarded. Eventually more public lands were opened for homesteading in Puna. However, large tracts remained in the public domain and continued to be openly accessed for hunting, gathering and spiritual practices.

With the break up of the traditional land and labor system by the establishment of private property, Hawaiians were pushed into the market economy to earn cash to purchase, lease, or rent land and to pay taxes. In Puna the primary resources for commercial sale were the coastal fisheries, salt, pulu (the hairy fibers from the hapu'u fern), 'ohi'a timber, and open land for cattle and goat grazing. Isaac Davis, traveled around Hawai'i to conduct an assessment of the King's lands. Of the King's land in Puna he wrote:

> Kaimu ahupua'a in Puna, was the first land that I saw. Cocoanuts and pandanus are the only things growing, there is sand on the sea shore, and rocks are the most. Waiokolea, and Ili in Kaimu, is of the same quality, but there is a fish pond in Waiokolea, it is a good pond, and I have leased it for $909.00, and R. Keelikolani has it.
>
> Apua, Ahupuaa in Kau, I do not know the extent of this land, not at the sea shore, but, on making observation, there is a lot of stone on that land, Kapaakea's man told me that salt is the only product on this land, but it is very little. And I called the

16 Seven lands in Puna were left unassigned during the Mahele - Kahue, Huluna-nai, Iililoa, Kaunaloa, Ki (B), Keekee, and Keonepoko 2. In 1888 it was decided that these would be government lands. in Allen, 1979.

natives to lease it, but there was no one wanted it, and no one made a reply (Interior Department Letters, 1857, March 26).

Pulu processing became an industry in Puna in 1851. Pulu is the soft downy material which covers the shoots of the hapu'u (tree fern). It was used for mattresses, pillows, and upholstery. At its peak, in 1862, Hawai'i exported 738,000 lbs. of pulu worldwide to San Francisco, Vancouver, Portland and Australia. It sold for 14 to 28 cents a pound.

In 1860, Abel and C.C. Harris and Frank Swain leased the ahupua'a of Panau for the hapu'u on the land. Kaina and Heleluhe requested government leases on Lae'apuki and Panauiki. Kaina maintained two pulu picker camps, one new Makaopuhi Crater and the other near the present Keauhou Ranch Headquarters. Pulu was collected, processed, and dried at these camps and then hauled down the pali to Keauhou Landing on mules.

In an article about pulu in 1929, Thomas Thrum suggested that the pulu industry broke up homes and dispersed the Hawaiians:

> The sad part of the story lies in the fact that the industry caused homes in various sections to be broken up, the people moving up into the forests to collect the pulu. In many cases whole families were employed, who provided themselves with rude shelter huts meanwhile, to live long periods at a time in damp, if not actually rainy quarters, without regular and proper food, that resulted in colds and illness.

H.L. Lyman surveyed the unsold government lands of Puna and filed his report in 1865. He described those lands as follows:

1. Makuu to Kaohe, a large tract mauka, rocky land, worth little.

2. Kalapana, about 200 acres, mauka, rocky land.

3. Kaapahu, about 300 acres or 400, mauka, rocky land.

4. Laeapuki, about 200 acres, mauka, rocky land (Holmes, 1985).

Holmes quotes a Dr. Russell's description of the Ola'a area which provides an insight into the changes in the Hawaiian population and their way of life in the late nineteenth century:

> 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 Hawai'i, in a spot corresponding to the present 22-mile point of the Volcano road. Making of 'kapa' [native bark] 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 al 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. I have heard, however. that as late as the seventies Kalakaua still levied a tax on olona fiber from the natives of Puna and Olaa districts, which fiber he sold at high prices to Swiss Alpine clubs, who valued it for its light weight and great strength (Holmes. 1985).

Throughout this period. subsistence fishing, ocean gathering, hunting and forest gathering was still the primary livelihood for the Hawaiians living in the Puna district. Despite strong economic and social forces pushing to disperse the 'ohana. Hawaiians still maintained strong family ties and obligations. They continued to look after the welfare of their relatives and friends. Hawaiians who had to move away to earn a living were periodically able to return to visit and find refuge among relatives and solace from the drudgeries and alienating social conditions of wage-labor. Some left their children to be raised by grandp ↑ ↑ al setting rather than in a port town. An article in the Ka Nuhoı hana as a source of support and comfort:

> The kanaka has no need to be very constant, and does not suffer if he has neglected accumulation and aprovision [sic] for old age. The bounty of the whole race affords a sure refuge to any bankrupt, cripple, or pauper among their number. A kanaka can never become dead broke and dread the poor house, because he will always be welcome to fish and poi in any native hut that he enters. And so it is hard to get plantation hands out of such easy going, spending, mutually helping people[17].

In June 1873, The Boundary Commission conducted hearings to settle the boundaries of the privately held lands in the ahupua'a of Keaau in the district of Puna. Uma. a native Hawaiian who was born at Keauhou in Keaau "at the time of the return of Kamehameha Ist from Kaunakakai. Molokai." provided testimony which included descriptions of the natural features and resources in the area and the activities of Hawaiians in the district. The following are relevant excerpts from his testimony showing that the inland forest of Puna was used for birdcatching, the gathering of sandalwood and olona and that the lava tubes were used for shelter during war:

> I have always lived there and know the boundaries between Keaau and Waikahekahe. My parents pointed them out to me when we went after birds and

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17 Ka Nuhou, May 23, 1873.

sandalwood. Waikahekahe Nui joins Keaau at the sea shore at Kaehuokaliloa [sp.], a rock that looks like a human body, which is between two points, the point on Waikahekahe is called Kaluapaa and the one on Keaau Keahuokaliloa, thence the boundary runs mauka to place called Koolano, the pahoehoe on the North side is Keaau and the good ground where cocoanut trees grown is on Waikahekahe. In past days there was a native village at this place. Thence mauka to Haalaaniani (Ke Kupua) when the old road from Kalapana, used to run to Keaau thence the boundary runs to Wahikolae, two large caves, the boundary runs between them thence mauka, to another cave called - Oliolimanienie, where people used to hide in time of war . . . Keaau on the Hilo side of the road running mauka, thence to Kikihui, an old Kauhale [living compound] for bird catchers, thence to Hoolapehu, another old village, thence to Alaalakeiki, which is the end of Waikahekahe iki and Kahaualea joins Keaau. This place is at an old Kauhale manu [birdcatcher's compound].. . . from the Hilo Court House to the Government School house, thence mauka to KeeKee: Kauhale kahi olona [olona fiber combing compound] in Olaa, the boundary is a short distance from the Government road, on the South East side . . . the sea bounds Keaau on the makai side Ancient fishing rights, including the Uhu which was konohiki fish extending out to sea[18].

Puaa was another native who testified on the boundaries of Keeau. His testimony reveals more information on resources and activities in the interior of Puna as he identifies places with breadfruit trees, cultivation plots, marshy areas, springs, and banana trees:

> The boundary between Keaau and Waikahekahe is the land of, or place Keahuokaliloa, thence mauka along Waikahekahe to pahoehoe, on Hilo side of a place called Kukuikea (where the natives cultivate food, and where bread fruit trees grow, thence to Hilo side of Waiamahu a large place that fills with water in the rainy season, thence to Koolano, the pahoehoe on the Hilo side of it is Keaau the soil is on Waikahekahe nui thence mauka along the road to Halaaniani. Keaau on the Hilo side of road: Halaaniani is a puupahoehoe, in a grove of ohia trees, called Keakui. . . .below Kahopuakuui's houses, to a place called Kilohana where Oranges are growing there the boundary of Keaau and Olaa leaves the Volcano road, and runs mauka above these Orange trees, thence to an ohia grove called Puaaehu, thence to Waiaele . . . a water spring with banana trees growing near it used to be an old kauhale.

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18 Hawai'i State Archives. Boundary Commission Hawai'i, 3rd & 4th Circuits. Petitioner's Exhibit B, "The Ahupuaa of Keaau, District of Puna, Island of Hawaii, 3d, J.C. Before the Commissioner of Boundaries, Fourth Judicial Circuit. Territory of Hawai'i. In the Matter of the Boundaries of Waiakahekahe - 'iki. upon the petition of W.H. Shipman, owner. Carl S. Carlsmith, attorney for petitioner. I.M. Stainback, Attorney General, Hilo, June 18th, 1914.

Kenoi, originally from Kapapala in Kau provided testimony on the boundaries, as he had learned them from companions with whom he went gathering in the forests. He spoke of going after the Oo bird in Keauhou; after sandalwood in Kahauale'a and at Pu'ukea; and catching the Uwao at Namamokale, opposite to Kauanahunahu. He also spoke of two ponds, Nawailoloa and Kilkohana on the road to Panau from Palauhulu. Nailima, a native Hawaiian from Ola'a also provided testimony. He verified the accounts of those who went before him and also identified in his descriptive testimony a hill covered with puuhala by Kilohana; an old village at a place called Kaaipuaa; and a pond of water with aweoweo growing in it at Waiaele on the old road from Olaa to Pooholua. Waipo, a native Hawaiian from Waiakea identified a small cave where natives worshipped idols at a place called Kawiakaawa and of a place called Naauo between Mawae and Waiaele where people used to flee and live in time of war.

A description of the land use pattern and practices in Kapoho and Keahialaka in the late nineteenth century was recorded in a brief filed by Hitchcock and Wise and filed with the Boundary Commission for the 3rd and 4th Circuits of Hawai'i on March 20., 1897. Of significance is the fact that where two ahupua'a were owned in common by the same family, the boundaries between the two lost significance. The brief also speaks of and isolated section of land which belongd to no one, and was therefore open to all, as was similar to the "Kamoku" in Hamakua. In part it stated:

> The two ahupuaas of Kapoho, and of Keahialaka, were practically held by one family. By the great Mahele, Kapoho was confirmed to O. Kanaina, while Keahialaka was confirmed to his son W.O. Lunalilo. The influence remains that the laws and customs which in the case of adjoining ahupuaas under different owners would have held and trespass, the one to the other thereby enjoined, were in this instance permitted to lapse. It is furthermore probable, and the presumption is given force by the subsequent isolation of Kaniahiku so-called that it was an Okana "a no man's land," similar to the Kamoku of Hamakua. This trend of the Puna coastline on both sides of the East Point with ahupuaas extending back rectangularly from the sea coast, would naturally bring about an irregular shaped remnant in the interior similar to those in the North Kohala District, and the upper Keauhou lands of Kona[19].

In 1887, American planter interests organized a coup d'etat against King David Kalakaua forcing him to sign the Bayonet Constitution which took away his sovereign powers as king and the civil rights of Hawaiians. In 1889, 8 men were killed, 12 wounded, and 70 arrested in the Wilcox Rebellion which attempted to restore the Hawaiian Constitution. By 1890, non-Hawaiians controlled 96 percent of the sugar industry and Hawaiians were reduced to only 45 percent of the population due to the importation of Chinese, Japanese, and Portuguese immigrant laborers by the sugar planters.

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19 Hawai'i State Archives, Boundary Commission - Hawai'i 3rd & 4th Circuits, In Re-Boundaries, Ahupuaa of Keahialaka, Puna, Hawai'i, Brief of Hitchcock & Wise, filed March 20, 1897, 2:10 pm.

In the year 1893, the United States Minister assigned to the Kingdom of Hawai'i, John L. Stevens, conspired with a small group of non-Hawaiian residents of the Kingdom, including citizens of the United States, to overthrow the indigenous and lawful Government of Hawai'i[20]. On January 16, 1893 U.S. military forces invaded Hawai'i. On January 17, 1893, a Provisional Government was declared and was immediately recognized by the U.S. minister plenipotentiary to Hawai'i.

In 1898, the United States annexed Hawai'i through the Newlands Resolution without the consent of or compensation to the indigenous Hawaiian people or their sovereign government. Hawaiians were thereby denied the mechanism for expression of their inherent sovereignty through self-government and self-determination, their lands and ocean resources[21].

Through the Newlands Resolution and the 1900 Organic Act, the United States Congress received 1.75 million acres of lands formerly owned by the Crown and Government of the Hawaiian Kingdom and exempted the lands from then existing public land laws of the United States by mandating that the revenue and proceeds from these lands be "used solely for the benefit of the inhabitants of the Hawaiian Islands for education and other public purposes," thereby establishing a special trust relationship between the United States and the inhabitants of Hawai'i.

In Puna, Joseph Nawahi, a founder of the Hui Aloha Aina (Hawaiian Patriotic League) had a strong following of royalists. On May 23, 1893, four months after the overthrow of the Hawaiian monarchy, Reverend Rufus A. Lyman, patriarch of the Lyman

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20 U.S. Congress. House. Report No. 243 "Intervention of United States Government in Affairs of Foreign Friendly Governments." 53rd Congress, 2d Session. December 21, 1893. Washington: Government Printing Office, 1893. U.S. Congress. Senate. Committee on Foreign Relations. "Hawaiian Islands." Report of the Committee on Foreign Relations With Accompanying Testimony and Executive Documents Transmitted to Congress from January 1, 1893 to March 19, 1894. Volumes I and II. Washington: Government Printing Office, 1894. Also referred to as "The Morgan Report." U.S. Congress. Senate. Committee on Foreign Relations. Report No. 227. "Report from the Committee on Foreign Relations and Appendix in Relation to the Hawaiian Islands, February 26, 1894." 53d Congress 2d Session. Washington: Government Printing Office, 1894. U.S. Department of State. "Papers Relating to the Mission of James H. Blount, United States Commissioner to the Hawaiian Islands." Washington: Government Printing Office, 1893.

21 Littler, Robert M.C. The Governance of Hawaii: A Study in Territorial Administration. Stanford: Stanford University Press, 1929.

Estate which now owns substantial landholdings in Keahialaka and Kapoho wrote to his colleague, M. Whitney in Honolulu, suggesting that the Provisional Government open up government and crown lands for homesteading by Hawaiians as a means of winning the support of Hawaiians and undermining the influence of Nawahi in the district:

> Here in Puna there are only three Crown Lands Ola'a, Kaimu and Apua next Kau boundary. The Govt. lands are scattered all through District, and large tracts near the villages especially Opihikao, Kamaili, Kehena, and not under lease. And there are quite a number of young men there with families who own no land, who will probably remain in Puna and cultivate coffee, kalo, oranges, etc., if you get them settled on land they can have for homes for themselves. Nine of them have commenced planting coffee on shares for me. Puna has always been Nawahi's stronghold, and I want to see his hold on natives here broken. And I think it would help do it, if we can show natives here that the Govt. is ready to give them homes, and to improve the roads.

In 1894, the Provisional Government set up the Republic of Hawai'i which instituted a program of opening up government lands for homesteading under the Land Act of 1895. In Puna, as Lyman had predicted in his letter to Whitney, homestead grants were quickly purchased and cultivated in coffee. Coffee acreage expanded from 168 acres in 1895 to 272.5 in 1899 (Thrum, 1895c, 1899) in Ola'a and Pahoa.

Territorial Years

From 1900 through 1959 Hawai'i was governed as a Territory of the United States. The official U.S. policy was to Americanize the multi-ethnic society of the Hawaiian Islands, beginning with the children through the American public school system. Hawaiian and other languages except English were banned as official languages or as a medium of instruction. An elite group of Americans who were the owners and managers of what was called the Big Five factors had monopoly control over every facet of Hawai'i's economic and social system[22].

Economic development in Puna centered around the scarcely populated inland forest areas around the towns of Pahoa and Ola'a. A multi-ethnic plantation community also developed in and around these towns as immigrant Japanese, Puerto Rican and Filipino

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22 Fuchs, Lawrence, Hawaii Pono: A Social History. San Diego: Harcourt, Brace & World, Inc., 1961; Kent, Noel. Hawaii, Islands Under the Influence. New York: Monthly Review Press, 1983; Lind, Andrew. An Island Community: Ecological Succession in Hawaii. Chicago: The University of Chicago, 1938; reprint New York: Greenwood Press, 1968..

laborers were imported to work on the developing sugar plantations. Hawaiian families continued to live along the coastal areas in lower Puna, particularly around Kalapana.

The Puna Sugar Company was established in 1900 in Kapoho. The lowland forest was cleared for cane fields and railroads were built. Puna Sugar expanded around Pahoa and Ola'a.

At the turn of the century coffee was still an important agricultural industry in Puna. The Shipman family a major landowner in the district ran the Shipman Ranch in Kea'au. Pineapple was started for export to California. In 1908, the Hawaiian Mahogany Company erected a lumber mill in Pahoa and sent out its first shipment of 20,000 ohi'a log ties to the Santa Fe Railroad. In 1910, the company became the Pahoa Lumber Mill and obtained cutting rights to 12,000 acres of Territorial Forest in Puna[23].

In 1911 the Territorial Government designated 19,850 acres as the Puna Forest Reserve. In 1928, the forest reserve was expanded to include a total of 25, 738 acres[24].

A book called Geography of the Hawaiian Islands by Charles Baldwin and published in 1908 provides a glimpse of the Puna district at the turn of the century. The following are excerpts from the section about Puna:

> The rainfall is so great in parts of the district that this lava has been rapidly decomposed, and the heaviest of forests are to be found, as in Olaa and the region about Pahoa [the Puna Forest Reserve] A large part of the soil of upper Olaa is ash which probably came from Kilauea; the great fertility of this soil is due to the decayed vegetable matter which has been added to it . .
>
> The Olaa section of Puna is a fine agricultural region, but, owing to the want of a market, small-truck farming does not pay. However, vanilla, tobacco, pineapples, and bananas grow well; and the rubber industry is destined to be an important one, as the climate is particularly well adapted to the growth of rubber trees. The cultivation of coffee in Olaa has been abandoned, as the trees did not thrive there.

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23 Skolmen, Roger, "Hawaii's Forest Products Industry," Proceedings of the 18th Annual Hawaii Forestry Conference held November 18 - 19, 1976, Honolulu.

24 Governor's Proclamation, June 29, 1911; Governor's Proclamation, December 22, 1928, in Hawai'i State Archives file of Governor's Proclamations.

> All the lower lands of Olaa are planed with the cane of the Olaa Sugar Company. This is one of the largest plantations on Hawaii, and occupies nearly all of the available cane land of the Puna district, including the Kapoho and Pahoa tracts . . .
>
> A long section of the Puna coast, thirty or forty miles, shows evidence of having sunk: cocoanut trees are found below the tide level, or their dead stumps stand out in the sea.
>
> At Kapoho there is a warm spring . . . Other interesting features of Puna are: the lava tree casts found in the forest above Kapoho; the ~~bowlders~~ boulders strewn along the coast near Pohoiki by the great 1868 tidal wave; the heiau of Wahaula in farthest Puna (Baldwin, 1908, 78-79).

The Kalapana Oral History Project, finished in 1990 by UH Hilo anthropologist Charles Langlas and student researchers, is a primary source of information about the life of Hawaiians in Lower Puna during the territorial period. This section summarizes the descriptions of life in the district as recorded in the manuscript for the project.

Throughout the Territorial years the majority of the food of the Hawaiians in Puna was home-produced. 'Uala (sweet potatoes), kalo (taro), and 'ulu (breadfruit) were the made staples. Seafood especially fish, opihi (limpet) and limu (seaweed) was the main protein. Chickens, pigs and cattle were raised. Pigs and goats were hunted and the meat was usually smoked. Some households kept cows for milk and even made butter. When cash was earned special items from the store such as flour, sugar, tea, coffee and rice could be bought.

Sweet potato was usually grown around the home. Families also grew chili pepper, onion, and sometimes pumpkin, watermelon, tomato or cucumber. Families in Kalapana usually had a taro patch up in the hills, sometimes three or more miles from their houselots. E.S. Craighill Handy wrote that in 1935 when he toured Puna to appraise the old native horticulture, "one energetic Hawaiian of Kapa'ahu had cleared 'ohi'a forest, at a place called Kaho'onoho about 2.5 miles inland, and had a good stand of taro, bananas, and sugar cane in two adjacent clearings" (Handy, 1972, p. 541).

Pigs were allowed to run free, but to keep them tame and near the home, they were fed sweet potato vines and tubers after harvesting, papayas, mangos, or breadfruit. Each family had its own way of marking its pigs by notching or slitting the ears or cutting the tail. Some pigs went wild and wandered up the Kilauea mountain, even above the zone where the families cultivated taro. These were hunted with dogs.

The Hawaiians in Kalapana utilized many methods of fishing during this period. Net fishing for 'opelu (mackerel) was the highest-yielding method. It was usually dried for later consumption or for sale. Aku was also caught for subsistence and for sale in season. The

Kalapana Oral History provides the following account about 'opelu fishing in Kalapana during the twenties and thirties:

> The 'opelu season began in the summer months, after a first-fruits sacrifice: a fish from the first catch was placed on the ku'ula rock at the beach. The ku'ula rock was kept by a guardian, who brought it out for the ritual, and then took it away for safe-keeping. Traditionally the year was divided into two seasons, a period from approximately February to July, when aku could be caught and 'opelu was taboo, and a period from approximately August to December, when 'opelu could be caught but aku was taboo. The opening of the 'opelu season was marked by a fish sacrifice (Langlas, 1990, 35-36).

'Opelu fishing went from daybreak to evening. The canoes from a village generally went out together and kept each other in sight in case one should get into trouble. When they returned, people would be waiting to help carry the canoe up and everyone would get a share of fish. Later in the day or at night the canoes might go out for 'u'u or kawele'a. On dark nights, if the fishermen went out, children would gather at the beach and keep bonfires of coconut leaves going as a guide to the fishermen back to shore. Until 1926 the nets were made of olona from the wet uplands of Puna. After that they were replaced by store-bought cord.

A one-room house, with a separate cookhouse was the usual style in Kalapana around 1900. By the twenties several families still lived in such dwellings, but the majority of the families were already living in sizable multi-room board houses built in the Western style. Many families had also installed kerosene stoves in their houses. Since there was no running water in the Kalapana area, families had outhouses for toilets. Water-barrels were used to collect water from the roof for drinking and cooking. In times of drought, they had to drink brackish water from the ponds. Brackish ponds were used for bathing, for doing laundry, for rinsing off saltwater after coming from the ocean, and for watering stock.

Through the twenties and the thirties, families still made their own poi from breadfruit or the taro they grew in the uplands. They usually made enough poi to last the whole week. After this, there was only a limited amount of daily cooking to do, mostly broiling fish on the fire or salting shellfish to eat with the poi. Sometimes the family might cook a pig in the imu, stew dried meat or make rice over the fire or kerosene stove.

Weaving lauhala mats for home-use and for sale was a major part of a woman's work during this period. Lauhala grew all along the coast, but women often went to Kehena to gather good quality leaves.

Luau's continued to be held for family gatherings to celebrate special occasions and life cycle events - birthdays, weddings, anniversaries, funerals, etc. The lu'au for Christmas usually lasted through New Year's. 'Ohana relationships remained strong. Even the practice of hanai (adoption between family members) continued in Kalapana.

Through the twenties and early thirties, relations with the outside were limited by the distance and difficulty of travel. The outside world was represented in Kalapana by school teachers, ministers from Hilo, Chinese stores which sold goods from the outside, and campaigning political candidates. Automobiles were introduced and most families eventually had a car by the late 1930s. Still, most people went to town only once or twice a month to shop for cloth, kerosene, and food items they didn't grow. Rice and flour were purchased in big bags. Since they seldom went to town, the people of Kalapana did not go to Western doctors and hospitals. Hawaiians in Kalapana relied on Hawaiian medicine, using herbal remedies for sickness and broken bones.

Even as cars became common in the thirties, it was impractical to commute to work every day. Those who got a job outside usually moved there, even it it was as close as Pahoa. A few men stayed outside through the week and came back for the weekend. The men who lived in Kalapana usually combined subsistence farming and fishing for food-production for the family with part-time work for cash -- roadwork for the county and small-scale selling of vegetables, fish or pigs. The county road from Kapa'ahu through Kaimu and up to Pahoa was a one-lane gravel road. Nearly all the Kalapana men did road work for the county, breaking up rock into gravel. Each man worked an eight-hour day for two dollars, four or five days a month. The crew rotated so that all of them had a chance to work the same amount. Additional cash could be made by selling extra 'opelu to the Chinese store-owners to dry, or fresh in Pahoa. Some grew 'awa in the uplands which was cut and dried and sold to a buyer from Hilo for export to Germany. Some husked and dried coconut to sell as copra to Chinese storeowners. Sometimes Chinese drove from Hilo to buy pigs in Kalapana. As mentioned above, the women sold lauhala, weaving mats to fill orders from Hilo and Honolulu. They also sold smaller items such as hats and fans to sell to tourists. Children sometimes sold coconuts to tourists and posed for pictures. In 1918, the movie Bird of Paradise was filmed at Kaimu beach. Grass huts were built and the Kalapana people were paid to wander around in sarongs.

In 1932 a new force entered the lives of the Kalapana people. The Hawai'i Volcano National Park, urged on by the Governor's office, the Hawai'i County Board of Supervisors and prominent citizens, proposed expanding the park to include all of the land from Apua over to Kaimu Black Sand Beach. The people in Kalapana strongly opposed the proposal. Russell Apple interviewed Edward G. Wingate who served as superintendent of the Hawai'i Volcano National Park, at the time of the proposed acquisition. Wingate said that he supported the Hawaiians in Kalapana and felt it was wrong of the Federal Government or the park service to dispossess the Hawaiians of their homes, their land, and their traditional way of life. A compromise was reached. The Hawai'i Volcano National Park would expand to include the six ahupua'a of 'Apua, Kahue, Kealakomo, Panaunui, Lae'apuki and Kamoamoa, parts of Pulama and Poupou, and Keauhou in the Ka'u district. However, the lands from Kalapana over to Kaimu were deleted from the extension proposal.

Wingate was still concerned about negative impacts on the way of life of the Kalapana Hawaiians of the road that was to be built to link the Chain of Craters road to Kalapana, all the way to Kaimu. He believed that the road would put pressure on the Hawaiians to sell their homes in Kalapana to developers or others and their livelihoods which were still dependent on the land and sea would be destroyed. To make it possible for the Kalapana Hawaiians to continue their way of living, it was proposed that homesites be made available to them in the park extension so that the villagers could move into the park as they saw the need. In addition a fishing provision was added which allowed only Kalapana residents and those accompanied by a local guide to fish within the park extension. No Hawaiian was precluded from fishing in that area provided that there was a local guide. This provision, according to Wingate was "to protect the fishing for the people who lived from the sea and who lived from the land, to have some food source from the sea as some areas have been fished out." He also noted that serving as a guide provide jobs and a source of a little cash income for the Hawaiians in the district. Apple summarized Wingate's thinking as follows:

> A new village inside the Kalapana Extension was foreseen. The idea was a subsistence-type arrangement, with Hawaiians living in a traditional manner - - fishing offshore and along the coast, houses near the shore and agricultural plots inland. Exclusive fishing rights for those still living in Kalapana and for those living within the Extension were included[25].

In 1938, the U.S. Congress passed the Kalapana Extension Act (52 Stat. 781 et seq.), which set an important precedent by including a provision to lease lands within the extension to Native Hawaiians and to permit fishing in the area "only by native Hawaiian residents of said area or of adjacent villages and by visitors under their guidance." The special traditional subsistence lifestyle of the Hawaiians in Kalapana was acknowledged by the U.S Congress and measures were passed to protect it[26].

Under the New Deal, federal programs created new jobs for the Kalapana men. The federal government funded a county project to improve Kalapana Park and various roadbuilding projects in Puna. The Civilian Conservation Corps (CCC) established a camp for young single men at the Volcano. They cut trails, built stone walls, and were trained in carpentry skills. As military construction expanded in Honolulu in preparation for potential war with Japan, Honolulu became a boom town, attracting workers from the mainland and from the neighbor islands. Many from Kalapana moved there on the eve of the war

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25 Documents in the Hawai'i Volcano National Park Headquarters Library, "Transcriptions of a 1974 interview by Russell Apple with former superintendent Wingate concerning the Kalapana Extension" and "Homesite Provisions of the 1938 Kalapana Act" by Russell Apple, January 5, 1971.

26 Act of June 20, 1938 (52 Stat. 781 et seq.)

(Langlas. 1990).

World War II had a profound effect on Hawai'i. In Puna. those who remained behind were made to fear a Japanese invasion by sea. The coastline were watched and guarded by soldiers stationed in the Kalapana ares. Observation points were set up at Panau and at Mokuhulu. The beach at Kaimu and Kalapana was strung with barbed wire to stave off an enemy landing. Initially the Kalapana people were not supposed to go through the wire, but eventually the soldiers let the people crawl through to fish or collect seafood at the beach. There was a nightly curfew and blackout curtains were used because not a single glimmer of light was supposed to be seen.

There were 100 to 150 soldiers stationed in Kalapana and they were rotated every three months. Some camped in tents on Kaimu beach and Kalapana beach, some lived in the school cafeteria, and others in the gym and the priest's house at the Catholic Church.

During the war there were still men growing taro, but many of them were in their sixties. With the end of the war, they were getting too old to grow taro and make poi. Many younger men had left during the war, and many still left in Kalapana got jobs on the outside which left little time for taro. During the thirties fewer canoes went out to catch 'opelu. The last canoe which went out from Kaimu was that of Simon Wai'au Bill. When he got too old, in the late thirties, no more went out. Younger men were busy going to school or going out to work to learn the technique of catching 'opelu. A couple canoes from Kalapana continued going out even after the war. Eventually a boat ramp was constructed at Pohoiki, east of Kalapana, and the canoes were replaced by motorboats.

Other forms of subsistence production continued after the war, such as pole-fishing from shore, gathering limu and opihi and crab and raising stock. Hunting of wild pigs remained an important source of meat. Native plants were gathered for herbal teas and medicine.

Statehood

In 1958, on the eve of statehood, the Puna district began to be parcelled out in non-conforming subdivisions of raw land. Tropic Estates bought 12,000 acres of land between Kurtistown and Mountainview and cut it up into 4,000 lots which was put on the market for $500 to $1000. The project was named Hawaiian Acres (Cooper, 1985).

Royal Gardens was opened in Kalapana in the early 1960s. One acre lots were sold for $995. The brochure for the development read in part:

> Along the southern shores of the Big Island, Hawaii, largest of the Hawaiian chain lies the historic and legendary lands of Kalapana. This site the setting for Royal Gardens, a fertile area directly adjacent to the Hawaii Volcano

National Park with its spectacular attractions. yet only walking distance away from lovely beach and shore areas. Royal Gardens lots are all one acre in size. making it possible for the owners to have a small orchard or truck garden. or a magnificent garden. as well as a home and a haven for retirement (Cooper. 1985).

By contrast. the Bishop Museum study for the Kalapana Extension in 1959 described the coast nearest to Royal Gardens as follows:

> Shoreline of low. black. lava cliffs. battered continuously by windward waves .. This coast bears witness to the great volcanic forces underlaying it through numerous earthquake-opened fissures. and to the violence of tidal waves through huge blocks of lava which have been ripped from the ocean cliffs and hurled inland (Cooper. 1985. 265).

Actually, Royal Gardens land was 40 percent a'a (rough and broken lava rocks in tumbled heaps), 20 percent pahoehoe (solid thick sheets of lava. hard and smooth-surfaced with no soil covering), and 40 percent opihikao (extremely rocky muck with pahoehoe underneath. Water was scarce with just a few widely scattered waterholes (Cooper, 1985).

Like Hawaiian Acres and Royal Gardens, other non-conforming subdivisions developed in Puna prior to adoption by the County of a Comprehensive Zoning Ordinance. Gradually, these subdivisions attracted an in-migrant population of retirees. ex-military, and persons seeking an alternative lifestyle to urban centers in the United States. These included Eden Roc. Fern Forest Vacation Estates, Hawaiian Paradise Park, Hawai'i Beaches Estates. Aina Loa Estates. Orchid Land Estates, Leilani Estates, Nanawale Estates, Vacation Lands. Kalapana Black Sands Subdivision, Kalapana Gardens and Kalapana Sea View Estates.

Puna, A Cultural Kipuka

The landscape of Puna today is still dominated by the seismic and eruptive phases of the Kilauea volcano. The climate varies from the rocky shoreline, to barren lava fields, cultivated orchards, grassy plains and dense rainforests. It includes part of the Hawaii Volcanoes National Park, large undeveloped non-conforming subdivisions, unsettled Hawaiian Homelands, forest reserves, and small concentrations of population. The district is subject to heavy rainfall and periodically experiences severe flooding (County of Hawai'i, 1989).

The Puna district of the island of Hawai'i as a whole, and Lower Puna in particular, has been a rural area of Hawaiian cultural continuity. Out of 452 Hawaiians who lived in the Puna district in 1970, 77 percent or 350 lived in Lower Puna. In 1980, 1,334 Hawaiians lived in Puna, out of which 75 percent or 1,001 resided in Lower Puna. Between 1980 and

1990 the number of Hawaiians in Puna increased by 296 percent, to 3,953. For the first time, the majority of Hawaiians who lived in Puna resided outside of Lower Puna. Only 38 percent lived in Lower Puna, while 62 percent lived elsewhere. This was due to migration of Hawaiians into Puna from Hilo and other islands and the displacement of Hawaiians from Lower Puna by volcanic flows out of the Kupaianaha lava lake.

The following table shows population trends in the district as a whole:

Ethnic Group	1970	1980	1990
Hawaiian	452	1,334	3,953
Caucasian	1,237	5,078	9,515
Other Non-Caucasian	3,465	5,339	7,312
Total Population	5,154	11,751	20,781

(State of Hawai'i, 1991)

A modern infrastructure for households and farm lots such as electricity, piped water and sewage is still not available in many parts of Puna. Puna residents must therefore rely on generators, water catchments, centralized county water stands and outhouses for their households.

There are four major water systems in the district: Olaa-Mt. View, Pahoa, Kapoho, and Kalapana. Hawaiian Beaches has a privately owned water system. Glenwood and Volcano are not serviced by any water system and depend on roof catchment systems. There are no municipal sewerage systems in Puna. Most residents use cesspools and individual household aerobic treatment units. Aside from the primary routes in the Puna district , the majority of roads throughout the district are substandard and many are only cinder-surfaced. Puna has thousands of non-conforming residential lots which lack the basic improvements necessary for development or are being kept vacant for future speculation. Construction with the non-conforming subdivisions has increased. Strip residential development exists along the highways. There are three public school complexes in the Puna District in the communities of Keaau, Mt. View, and Pahoa.

Economically, Puna is primarily an agricultural district. Diversified agriculture prospers in the form of truck farming of lettuce, flowers, and cabbage in the Volcano area; papaya groves in Kapoho; and flowers, principally anthuriums and vanda orchids, in the Mountain View, Pahoa and Kapoho areas. Factors inhibiting the growth of these industries are the shortage of labor, housing, processing requirements, and plant disease. Vegetables

and a variety of fruits, primarily oranges and tangerines, are grown throughout the district. Macadamia nuts are planted on the Hilo side of Kea'au and additional acreage became available with the closing of the Puna Sugar Company in 1984. The former sugar lands will also be planted in papayas, bananas, alfalfa and trees for biomass. There are 197,900 acres zoned for agricultural use in Puna, but less than 50,000 acres is actively used for agriculture. The majority of agriculturally zoned areas have been subdivided for large lot residential purposes.

The major industrial activity in Puna is a large macadamia processing plant, northeast of the sugar mill. Other industrial activities include a kim chee factory, quarrying of lava materials, slaughter houses, bakeries, flower packaging, papaya processing and packing and several cottage industries. These are primarily located around Kea'au and Pahoa, outside of lower Puna. There are no major government installations in the district (County of Hawai'i, 1989).

The rocky coastline which is comprised of sheer cliffs in many sections is subject to tsunami inundation and subsidence. Inland areas are vulnerable to volcanic and seismic activity. These natural phenomena has discouraged the development of major resorts or hotels in the district. There are now some modest Bed and Breakfast establishments in Puna and the ecotourist Kalanihonua retreat and conference center.

Native Hawaiian residents in the district, supplement their incomes from jobs or public assistance by engaging in subsistence fishing, hunting, and gathering for the households of their 'ohana or extended family. The fishermen, hunters and gatherers utilize and exercise their traditional access to the ocean offshore of the Puna district and the adjacent mauka (upland) forest lands. This forest area afforded access to middle elevation plants and resources for Hawaiians who lived in each of the ahupua'a of the Puna district.

Native Hawaiians of the district utilized the forests of Puna from generation to generation to gather maile, fern, 'ie'ie, 'ohi'a and other such native plants for adornment, weaving, and decoration. They also gathered plants such as kookolau, mamaki, and noni for herbal medicine.

Due to the alteration and degradation of low and middle elevation forests in other parts of Hawai'i island and the public status of the forests in Puna, Hawaiians from other parts of the island and from O'ahu also regularly gathered liko lehua, maile, fern, awa, and other native plants for hula (traditional Hawaiian dance) and la'au lapa'au (traditional Hawaiian herbal healing) purposes from this forest.

A survey of the role of hunting in the Kalapana-Kaimu Hawaiian community under the University of Hawai'i departments of Geography, Anthropology and School of Public Health in 1971 revealed that hunting in the forests mauka of Kalapana-Kaimu, which would be the Puna Forest Reserve, was an important part of subsistence for the Hawaiian households of the area. Despite the fact that there were not hunters in every household,

many households benefitted from the hunting activities because the meat was shared among extended family members and friends (Burdette, 1971).

In 1982, the U.S. Department of Energy commissioned a study by the Puna Hui 'Ohana, an organization of Hawaiian families in Puna. The 1982 survey by the Puna Hui 'Ohana of 85 percent of the adult Hawaiians in lower Puna (351 out of 413 adult Hawaiians) showed that 38 percent of those surveyed engaged in traditional subsistence hunting in the adjacent forests. It also showed that 48 percent of those surveyed gathered medicinal plants and 38 percent gathered maile in the nearby forests for household use.

Today, the Hawaiian community of Puna, particularly the lower part remains distinct, geographically, culturally, and socially. There is still a significant group descended from the first families who migrated to and settled in the district. They have a strong tradition of perseverance in a district that has been constantly changing and evolving. There is also a growing number of young Hawaiian families moving into Puna from Hilo, Honolulu, and other neighbor islands. Most have moved into the non-standard subdivisions which opened up in the district beginning in 1958. Informant interviews, conducted in 1994 with older and younger Hawaiian families in the district reveal the ongoing continuity of subsistence farming, fishing, and gathering and the associated cultural customs and beliefs.

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APPENDIX

SENATE JOINT RESOLUTION 19
103D Congress, 1st Session
(P.L. 103-150)

To acknowledge the 100th anniversary of the January 17, 1893 overthrow of the Kingdom of Hawaii, and to offer an apology to Native Hawaiians on behalf of the United States for the overthrow of the Kingdom of Hawaii.

Whereas, prior to the arrival of the first Europeans in 1778, the Native Hawaiian people lived in a highly organized, self-sufficient, subsistent social system based on communal land tenure with a sophisticated language, culture, and religion;

Whereas, a unified monarchial government of the Hawaiian was established in 1810 under Kamehameha I, the first King of Hawai'i;

Whereas, from 1826 until 1893, the United States recognized the independence of the Kingdom of Hawaii, extended full and complete diplomatic recognition to the Hawaiian Government, and entered into treaties and conventions with the Hawaiian monarchs to govern commerce and navigation in 1826, 1842, 1849, 1875, and 1887;

Whereas the Congregational Church (now known as the United Church of Christ), through its American Board of Commissioners for Foreign Missions, sponsored and sent more than 100 missionaries to the Kingdom of Hawaii between 1820 and 1850;

Whereas, on January 14, 1893, John L. Stevens (hereafter referred to in this Resolution as the "United States Minister"), the United States Minister assigned to the sovereign and independent Kingdom of Hawai'i conspired with a small group of non-Hawaiian residents of the Kingdom of Hawai'i, including citizens of the United States, to overthrow the indigenous and lawful Government of Hawai'i;

Whereas, in pursuance of the conspiracy to overthrow the Government of Hawai'i, the United States Minister and the naval representatives of the United States caused armed naval forces of the United States to invade the sovereign Hawaiian nation on January 16, 1893, and to position themselves near the Hawaiian Government buildings and the 'Iolani Palace to intimidate Queen Lili'uokalani and her Government;

Whereas, on the afternoon of January 17, 1893, a Committee of Safety that represented the American and European sugar planters, descendents of missionaries, and financiers deposed the Hawaiian monarchy and proclaimed the establishment of a Provisional Government;

Whereas the United States Minister thereupon extended diplomatic recognition to the Provisional Government that was formed by the conspirators without the consent of the Native Hawaiian people or the lawful Government of Hawaii and in violation of treaties between the two nations and of international law;

Whereas, soon thereafter, when informed of the risk of bloodshed with resistance, Queen Lili'uokalani issued the following statement yielding her authority to the United States Government rather than to the Provisional Government:

> "I Lili'uokalani, by the Grace of God and under the Constitution of the Hawaiian Kingdom, Queen, do hereby solemnly protest against any and all acts done against myself and the Constitutional Government of the Hawaiian Kingdom by certain persons claiming to have established a Provisional Government of and for this Kingdom.
>
> "That I yield to the superior force of the United States of America whose Minister Plenipotentiary, His Excellency John L. Stevens, has caused United States troops to be landed at Honolulu and declared that he would support the Provisional Government.
>
> "Now to avoid any collision of armed forces, and perhaps the loss of life, I do this under protest and impelled by said force yield my authority until such time as the Government of the United States shall, upon facts being presented to it, undo the action of its representatives and reinstate me in the authority which I claim as the Constitutional Sovereign of the Hawaiian Islands."

Done at Honolulu this 17th day of January A.D. 1893;

Whereas, without the active support and intervention by the United States diplomatic and military representatives, the insurrection against the Government of Queen Lili'uokalani would have failed for lack of popular support and insufficient arms;

Whereas, on February 1, 1893, the United States Minister raised the American flag and proclaimed Hawaii to be a protectorate of the United States;

Whereas the report of a Presidentially established investigation conducted by former Congressman James Blount into the events ~~vents~~ surrounding the insurrection and overthrow of the January 17, 1893, concluded that the United States diplomatic and military representatives had abused their authority and were responsible for the change in government;

Whereas, as a result of this investigation, the United States Minister to Hawaii was recalled from his diplomatic post and the military commander of the United States armed forces stationed in Hawaii was disciplined and forced to resign his commission;

Whereas, in a message to Congress on December 18, 1893, President Grover Cleveland reported fully and accurately on the illegal acts of the conspirators, described such acts as an "act of war, committed with the participation of a diplomatic representative of the United States and without authority of Congress", and acknowledged that by such acts the government of a peaceful and friendly people was overthrown:

Whereas, President Cleveland further concluded that a "substantial wrong has thus been done which a due regard for our national character as well as the rights o the injured people requires we should endeavor to repair" and called for the restoration of the Hawaiian monarchy;

Whereas the Provisional Government protested President Cleveland's call for the restoration of the monarchy and continued to hold state power and pursue annexation to the United States:

Whereas the Provisional Government successfully lobbied the Committee on Foreign Relations of the Senate (hereafter referred to in this Resolution as the "Committee") to conduct a new investigation into the events surrounding the overthrow of the monarchy;

Whereas the Committee and its chairman, Senator John Morgan, conducted hearings in Washington, D.C., from December 27, 1893, through February 26, 1894, in which members of the Provisional Government justified and condoned the actions of the United States Minister and recommended annexation of Hawaii'

Whereas, although the Provisional Government was able to obscure the role of the United States in the illegal overthrow of the Hawaiian monarchy, it was unable to rally the support from two-thirds of the Senate needed to ratify a treaty of annexation;

Whereas, on July 4, 1894, the Provisional Government declared itself to be the Republic of Hawai'i:

Whereas, on January 24, 1895, while imprisoned in Iolani Palace, Queen Lili'uokalani was forced by representatives of the Republic of Hawaii to officially abdicate her throne;

Whereas, in the 1896 United States Presidential election, William McKinley replaced Grover Cleveland;

Whereas, on July 7, 1898, as a consequence of the Spanish-American War, President McKinley signed the Newlands Joint Resolution that provided for the annexation of Hawai'i;

Whereas, through the Newlands Resolution, the self-declared Republic of Hawai'i ceded sovereignty over the Hawaiian Islands to the United States:

Whereas, the Republic of Hawai'i also ceded 1,800,000 acres of crown, government and public lands of the Kingdom of Hawai'i, without the consent of or compensation to the Native Hawaiian people of Hawai'i or their sovereign government:

Whereas the Congress, through the Newlands Resolution ratified the cession, annexed Hawaii as part of the United States, and vested title to the lands in Hawaii in the United States:

Whereas the Newlands Resolution also specified that treaties existing between Hawaii and foreign nations were to immediately cease and be replaced by United States treaties with such nations:

Whereas, the Newlands Resolution effected the transaction between the Republic of Hawaii and the United States Government:

Whereas, the indigenous Hawaiian people never directly relinquished their claims to their inherent sovereignty as a people or over their national lands to the United States, either through their monarchy or through a plebiscite or referendum:

Whereas, on April 30, 1900, President McKinley signed the Organic Act that provided a government for the territory of Hawaii and defined the political structure and powers of the newly established Territorial Government and its relationship to the United States;

Whereas, on August 21, 1959, Hawai'i became the 50th State of the United States:

Whereas the health and well-being of the Native Hawaiian people is intrinsically tied to their deep feelings and attachment to the land;

Whereas, the long-range economic and social changes in Hawai'i over the nineteenth and early twentieth centuries have been devastating to the population and to the health and well-being of the Hawaiian people:

Whereas, the Native Hawaiian people are determined to preserve, develop and transmit to future generations their ancestral territory, and their cultural identity in accordance with their own spiritual and traditional beliefs, customs, practices, language, and social institutions:

Whereas, in order to promote racial harmony and cultural understanding, the Legislature of the State of Hawaii has determined that the year 1993 should serve Hawaii as a year of special reflection on the rights and dignities of the Native Hawaiians in the Hawaiian and a the American societies:

Whereas the Eighteenth General Synod of the United Church of Christ in recognition of the denomination's historical complicity in the illegal overthrow of the Kingdom of Hawaii in 1893 directed the Office of the President of the United Church o Christ to offer a public apology to the Native Hawaiian people and to initiate the process of reconciliation between the United Church of Christ and the Native Hawaiians; and

Whereas it is proper and timely for the Congress on the occasion of the impending one hundredth anniversary of the event, to acknowledge the historic significance of the illegal overthrow of the Kingdom of Hawaii, to express its deep regret to the Native Hawaiian people, and to support the reconciliation efforts of the State of Hawaiian and the United Church of Christ with Native Hawaiians:

Now, therefore, be it Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,

Section 1. ACKNOWLEDGEMENT AND APOLOGY
Congress -

(1) on the occasion of the 100th anniversay of the illegal overthrow of the Kingdom of Hawaii on January 17, 1893, acknowledges the historical significance of this event which resulted in the suppression of the inherent sovereignty of the Native Hawaiian people;

(2) recognizes and commends efforts of reconciliation initiated by the State of Hawaii and the United Church of Christ with Native Hawaiians;

(3) apologizes to Native Hawaiians on behalf of the people of the United States for the overthrow of the Kingdom of Hawai'i on January 17, 1898 with the participation of agents and citizens of the United States, and the deprivation of the rights of Native Hawaiians to self-determination;

(4) expresses its commitment to acknowledge the ramifications of the overthrow of the Kingdom of Hawai'i, in order to provide a proper foundation for reconciliation between the United States and the Native Hawaiian people;

(5) urges the President of the United States to also acknowledge the ramifications of the overthrow of the Kingdom of Hawai'i, and to support reconciliation efforts between the United States and the Native Hawaiian people.
SEC. 2 DEFINITIONS

As used in this Joint Resolution the term "Native Hawaiian" means any individual who is a descendent of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii.
SEC. 3 DISCLAIMER

Nothing in this Joint Resolution is intended to serve as a settlement of any claims against the United States.

SURVEY METHODS FOR PUNA

The investigators had originally planned to conduct approximately 20 in-depth interviews and 4 focus groups discussions of informants representing Puna. As the investigators began the process of field work and data collection, it became apparent that the design needed to be adjusted according to the format or context desired by prospective respondents: and the schedules and availability of those informants originally identified and those added to the list. For example, despite efforts to build trust and rapport, and describe the intent and scope of the research, the investigators encountered some difficulties in eliciting information from focus groups at the beginning of the study process. It was apparent that in a group setting, more work was needed to inform and reassure participants about the study and the role of the investigators. Cultivating ties was even more critical given the controversial nature of geothermal development in Puna. The investigators modified their plans to involve more in-depth interviews and fewer focus groups that were comprised of community or politically-based organizations. However, focus groups involving 'ohana were generally successful. In these cases, the 'ohana representative usually requested that interested family members be invited to participate in the discussion.

Throughout the process, 52 individuals were contacted and interviews were requested (the investigators requested focus groups from 2 others representing Hawaiian organizations). Two of the individuals refused to be interviewed and 3 were generally unavailable during the times the investigators visited Puna. Two others, who were members of large 'ohana in Puna, requested an interview or focus group format that involved multiple family members. A total of 45 interviews were conducted. Thirty-nine of the interviews could be considered in-depth. That is, they were between 1 and 5 hours in length and the interviewer completed the semi-structured questionnaire. Six of the interviews were less than 1 hour. Many of the interviews exceeded 3 hours in length and it created some logistical problems because they ran into the time of the next scheduled interview[1]. In most cases, the interviewers completed the on-going interview and rescheduled with the waiting party. In a few cases, the informant did not show up at a scheduled interview and efforts were made to reschedule. Almost all of the interviews occurred at the residence of the informant.

Although most of the informants had 'ohana ties to the lower Puna area, many of them were not residing there at the time of the interview. Some informants had been displaced by the volcanic flows, others had voluntary moved to subdivisions within Puna. Twenty-one informants were residing in Pahoa or nearby subdivisions (e.g., Aina Loa, Leilani Estates); 17 were residing in lower Puna (e.g., Kalapana, Kaimu, Opihikao, Pohoiki); 5 were from Hawai'i communities outside of Puna (e.g., Hilo, Na'alehu, Hamakua), and 2 were from off-island (O'ahu, Moloka'i).

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[1]The investigators conducted the interviews between Thursdays and Mondays for approximately 10 successive weeks. The scheduling of interviews was very tight because of the study time frame and the required traveling between O'ahu and the Big Island.

A packet of information related to the HGP design was presented to respondents in both in-depth and focus group interviews. The packet included maps and diagrams of the project design so that the information presented to respondents was uniform and consistent. Informants were advised of the study process and purpose, their rights as respondents, allowed to ask any questions, and signed a consent form which verified their agreement to participate. The form served as verification that each informant understood and agreed to the use of their information and that they were given the opportunity to review and edit their contribution before it was released to the general public.

The interviews involved a number of activities aimed at eliciting information from the informant. The beginning phase generally focused on getting to know each other--sometimes over food or drink (this process was especially important to the informant) and explaining to the informants who the investigators were and the purpose of the study. Near the beginning and generally throughout the interview, a large map of the district was used to enable the informants to locate subsistence areas and culturally significant sites. Places on the map were identified by using color-coded dots. This process proved to be a very useful means for collecting data, not only because it was relevant to the aims of the study, but because it offered a visual tool that informants could relate to, served as an "ice-breaker", and offered a way to indirectly ask what might be considered sensitive questions.

Focus Group Discussions

The focus group method of information gathering was intended to allow for group interaction between informants and lead to insights into relevant issues and why certain opinions were held. It was designed to obtain perceptions on a defined area of interest in a permissive and informal environment. The 4 focus groups were comprised of 5-15 participants who represented 'ohana or community-based organizations[2]. The total number of individuals involved in the focus groups was 34. There was no cross-over between those involved in the focus groups and in-depth interviews. The two samples were comprised of separate sets of individuals. One focus group was comprised entirely of young residents, but the others were represented by a heterogeneous mix of ages.

[2]The size of some focus groups, especially those involving 'ohana, was difficult to determine because participants were coming and going during the course of the discussion. The number of participants reflects all that were at one time present.

SUMMARY OF INTERVIEW DATA

(INSERT MAP 1 OF PUNA ABOUT HERE)

Map of Puna

The map of Puna represents the general locations of subsistence activities, trails, and ancient sites (Map 1). Each dot or symbol (see legend) represents a location identified by an informant during their interview. As indicated on the map, fishing occurred along the district's entire coastline. Hunting occurred primarily in the mauka, forested areas, although some informants reported that pigs came down to the coastline at the east end of the district. The gathering of plants occurred throughout the district; some plants and trees were common in coastal areas, others were found in the forested mountain regions. Ancient trails were still in use by subsistence pracitioners. Most of them connected mountain and ocean areas. A variety of archeological and cultural sites were identified by informants. These included: heiau, grave sites, housing sites, fishing ko'a, rock walls, and natural features that were referred to in chants, folklore, and elelo noeau (poems).

Principles of Subsistence

The findings from the in-depth interviews with informants who were primarily Puna residents revealed that traditional subsistence activities were an integral part of their existing lifestyle and a viable aspect of the economy. The information provided in this section was presented in past tense, which reflects the writing style of the authors. It is important to note that this does not imply that the activity occurred only in the past or that it has ceased to exist. During the interviews, informants were asked to describe the activities they presently engage in.

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., luau, 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 fish 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 ('u'u, 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 for regeneration.

The resources were always abundant and readily accessible to those who possessed the knowledge about their location and skills required to obtain them[3]. Knowledge about subsistence was passed down intergenerationally. Subsistence areas were understood in terms of boundaries and used by ʻohana who lived within close proximity to an area. These ʻohana were traditional stewards 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 the more prevalent among hunters and gatherers. Fishermen, on 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 nearshore 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 ʻohana 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,

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[3] Most informants reported that over recent years they had observed a relative decline in the amount of resources. Although they were aided by new technologies (e.g., faster boats, 4-wheel drive trucks) informants believed they had to put in time and effort to obtain the desired or comparable amounts of a particular resource.

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 on 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

NATIVE HAWAIIANS ETHNOGRAPHIC SURVEY

HAWAII GEOTHERMAL PROJECT – EIS

CANDO 1994

Minerbi-Kelly

University of Hawaii, Manoa

Honolulu, HI 96822

Cemetery

Heiau

Fishpond

Cemetery

Papuaa opening

Cemetery

Kamaili

Kupapau Point

Cave of Refuge

Canoe Landing

Halepuaa

Kapoho

King's Pillars

Subsistence Practices & Cultural Resources

- Fishing and Ocean Gathering
- Hunting and Livestock Raising
- Plant Gathering
- Hawaiian Trails
- Archaeological and Cultural Sites to Protect

Mapping by Subsistence Practitioners

Scale

0 1 2 3 kilometers

0 5000 10000 15000 feet

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 maia (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 and Practices

Most of the informants in our survey identified themselves as Christians, yet held another set of beliefs that was consistent with traditional Hawaiian spiritual beliefs. For example, although they regularly attended Christian church, most informants mentioned that prayer to a Hawaiian god or deity was a ritual part of their subsistence. They prayed for good luck before an activity and they prayed to express gratitude for a successful catch. Some informants were more deeply involved in Hawaiian spiritual beliefs. They regularly acknowledged the presence of deities and asked permission to enter or take resources from their domain. These deities included: Moana (ocean), La (sun), Ua (rain), 'Ao (clouds), Honua (land), and Pele[4]. 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 'aina was the provider, and the tenants who were beneficiaries of these resources were obliged to "malama" 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 of the 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 mano (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.

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[4]With a few exceptions, all of the informants in our survey said that they believed in and respected Pele.

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 torch lights 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.

<u>The Goddess Pele</u>

References to Pele occurred throughout the interview process. Beliefs in Pele fell on a continuum from active worship to no belief at all. In general, informants did not actively worship Pele, but held a high reverance for her. 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 second hand 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 malama the 'aina, then Pele had a way of cleansing it by restoring it to its most primal form.

Trails and Access

Informants mentioned a number of trails in the Puna District that generally extended from mauka to makai (see Map 1). These trails provided access to traditional subsistence or recreational areas. 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 Malama 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.

Fishing

Virtually every informant in the survey engaged in fishing, or in the case of older informants, had at one time fished and still benefitted from the catches of younger family or community members. Although many informants had their own special or favorite fishing spots, most said that they fished the entire coastline from the east at Paradise Park or Kea'au, to the west well within the existing National Park boundaries[5]. With the exception of those with boats who could fish the deeper waters, most of the fishing occurred along the relatively shallow areas off of the rocky coastline. The techniques included throwing net, laying net, whipping (casting), and dunking (still fishing). Some informants stated that they went diving for fish on calm water days.

Those informants who had boats and fished either for subsistence or commercially, fished 1 to 2 miles offshore for ahi and aku primarily in the spring and summer, or closer to shore at about 600 feet for bottom-fish. They primarily used hand lines to catch fish from the boat.

Fishing occurred throughout the year (when the water was calm), although some species of fish are more common during the summer months; generally when they are spawning. For example, akule which schooled together in bays were more abundant during the spring and early summer months. 'U'u were more commonly caught during the summer and at night during a dark moon.

[5]Approximately 150 lower Puna Hawaiian families that were displaced by the creation of Volcano National Park have fishing and hunting rights within the park boundaries. Those using the park for subsistence purposes are required to have a permit.

Some of the fishing grounds, especially west of Kaimu were affected by the lava flows. Areas that use to have excellent moi holes were destroyed by the lava which altered the contour of the ocean floor. The changes have also contributed to decreased visibility which made it difficult to dive for fish in those areas. Some informants, however, said that ulua fishing was still very good in the areas affected by the lava.

In general, the fish caught were eaten raw, perhaps mixed with Hawaiian salt and limu, or cooked a variety of ways (wrapped in ti-leaf and steamed or puleu, or fried). A common way to prepare fish that were caught in abundance was to dry them for future use. When fishing in remote areas (e.g., National Park), Hawaiians would quickly clean, salt, and dry their fish to avoid spoiling during their long journey home. One informant reported that he only ate fish with white flesh because he was a descendant of ali'i (chief).

The types of fish that informants generally caught were (see Appendix __ for description of each species):

Akule
Aholehole
Ahi
Aku
Aweoweo
Ehu
Enenue
Kala
Kole
Kumu
Manini
Moi
Opakapaka
Opelu
Papio/Ulua
Uhu
Oouoa
'U'u
Weke

Ocean Gathering

Fishing was an activity that generally involved multiple family members or an entire 'ohana. Some 'ohana went fishing exclusively (especially if the method was labor intensive), while others engaged in a variety of subsistence activities, including ocean gathering. Ocean gathering involved prowling the waters edge in search of limpids and other shellfish, or wading the shallows in search of limu (seaweed). Generally, the best time to gather these ocean resources was during low tide and/or during a dark moon phase.

limpets ?

Gathering along the rocky shoreline was very hazardous because one tended to be preoccupied with their activity and oblivious to the errant, large waves that came crashing on the rocks. As a rule, Hawaiians were taught to never turn their backs to the water because of this threat. Some informants mentioned that they always threw their first catch (e.g., opihi) into the ocean as an offering and a way to gain protection from the waves.

There was a lot of concern expressed about diminishing shoreline resources. The decline was attributed to over-harvesting, especially by those who were from outside of Puna and insensitive to traditional conservation practices. For example, outsiders or newcomers who often gathered for commercial purposes were said to employ harvesting techniques that did not allow for rejuvenation (e.g., picking limu by the roots instead of cutting at the bottom) or taking undersize juveniles that were too young to reproduce (e.g., taking dime-size opihi).

The types of ocean resources that informants reported gathering included (see Appendix __ for description of each species):

A'ama Crab
Kupe'e
Limu
Opae Ula
Opihi
Ula
Wana

Forest Gathering

Hawai'i's conditions regarding soil, climate, competition with plants and animals, and isolation by mountain ranges or bodies of water served to produce a highly unique environmental situation for the evolution of plant life (Degener, 1975). Consequently, Hawaiian flora consists of plants that have been so changed by local conditions from the ancestral structure that they are now recognized as being endemic, or peculiar to these islands. According to gatherers, the same plant species also varied between the Hawaiian Islands and even between certain districts of the same island. The plants in Puna were believed to be special because of their colors, shapes, and fragrance, and they grew in an expansive rainforest that was fed by unique natural and spiritual elements[6]. For this reason, Puna was a favorite gathering area for hula halau on the Big Island and throughout Hawai'i.

[6]One informant said that the a'ali'i that grew in Puna had larger capsules and was not as tightly packed as in other places. There was also a type of laua'e that didn't have dots on its underside and others that had round and stubby leaves. The maile found in Wao Kele O Puna was said to have longer leaves.

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, and art and adornments. Informants generally had distinct areas or secret places where they gathered plants; and others who wished to venture into these areas were obliged to ask permission.

Maile was often picked for special 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 dedications, 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 la'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 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 (see Appendix for description of each species):

- A'ali'i
- Awa Kolo
- Forest Flowers
- Guava
- Hapu'u
- Ko'oko'olau
- 'Ie'ie
- Laua'e
- Lauhala
- Maile
- Mamake
- Mango
- Niu
- Noni
- Ohia Lehua
- Orange
- Pa'iniu
- Pala'a
- Palapalai
- Pink Opiko
- True Koli

Hunting

The hunting range of Puna residents was very broad. It extended from well within the National Park (for those with permits) to the shoreline areas of Nanawale. The hunters were primarily after pigs, but also hunted wild goats and cows. Some informants also reported hunting wild donkeys in the past. All of the animals hunted were at some point in history introduced to Hawai'i, generally as domesticated livestock, and eventually escaped or were turned loose and became feral. 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 triganosis 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 'aina.

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 triganosis. 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 oven. The imu was comprised of hot rocks (heated by fire for 2-3 hours) placed in a pit, covered with crushed banana stumps; the pig was placed on top of the stumps and 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 waiwi (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 cultivated plants for food and materials in areas surrounding their house or in some cases, on tracts of land that required a long hike or travel by four-wheel drive. The types of plants or trees that were grown around the yard included kalo (taro), ʻuala (sweet potato), maia (banana), ulu (breadfruit), kukui (candle nut tree), niu (coconut), papaya, lauhala (screwpine), noni, ti, etc.

Some respondents used tracts of land they owned inside Kamaili to cultivate dry-land kalo. The planting, harvesting, and preparing of kalo was a family effort and a way to provide families with poi. About every three weeks the ʻohana would get together to plant, harvest, and make 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 ʻohana 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 off-shoots which represented children. The entire plant system represented the ʻohana. 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 papakuiai (wooden trough) and pounded with a pohakukuiai (stone pestle)[7]. Kulolo 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. ʻUala was often baked in the imu, peeled, and 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 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 opelu would otherwise suffer from a rash, some ti leaves were customarily tied around the tail of the fish. Ti was also used to wrap hoʻokupu which was delivered as offering to various gods or

[7]Although some Hawaiians still pound their poi the traditional way, most of the poi made today is processed by machine.

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 night time 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, cultivatable 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.

PERCEIVED IMPACTS OF HGP

There existed a general belief that Puna should not be responsible for other peoples' energy needs. Residents in this district felt that they had to bear the brunt of the impacts so that those living in other areas, even other islands, would have their energy needs met. Some informants believed that, in effect, they had to pay the price for overdevelopment and fueling a tourist-based economy that they had misgivings about.

The perceived impacts of geothermal development on the practices and beliefs of Puna residents were numerous and varied. It is important to note that the impact issues that were discussed by informants were from a sample of residents who fit the criteria for sample selection. That is, they were members of established Hawaiian 'ohana from Puna, subsistence practitioners, cultural bearers, etc. The perceived impacts were therefore most pertinent to the activities that comprised their lifestyle. There were numerous other issues that the investigators became aware of that were not reported to us directly from the informants and were often outside the range of their direct experiences. Many of these issues related to concerns that tended to be more technical in nature or based on a western scientific perspective.

Most of the informants, especially those who were subsistence practitioners, believed that the development of a 500 megawatt geothermal project would have severe impacts on Puna's environment and the way of life for their 'ohana. Using the existing 25 megawatt Puna Geothermal Venture (PGV) as a frame of reference, some informants imagined that the impacts of the proposed 500 megawatt development would be devastating to the rainforest and spell an end to Hawaiian subsistence activities that were already being hampered by diminishing environments and resources. The loss of subsistence and other cultural activities would mean the loss of "hands-on" learning for Hawaiian children. One informant believed that the classroom would become the only place to learn how to be Hawaiian--and that was a major problem because knowledge would be taken out of context.

A few informants who believed that the impacts would be minimal, were not as actively involved in subsistence activities, had family members employed at PGV, and welcomed the idea of cheap geothermal generated electricity and other modern amenities in their homes. These proponents of HGP believed that the steam from the vents was not toxic, but actually good for peoples' health. Some mentioned that as children, their parents would take them to the rift zones and have them inhale the steam in order to cure colds and other respiratory ailments.

It is important to note that the volcano naturally emits sulfur dioxide which is relatively innocuous: while the substance emitted from geothermal drilling contains hydrogen sulfide, which is highly toxic in large doses. One informant believed that the gases released by geothermal drilling was too raw and potent because it was not allowed to filter naturally through the rocks before reaching the earth's surface.

Proponents of HGP also believed that those Puna Hawaiians who opposed the HGP were less worldly and too attached to old ways, exaggerated or over-romanticized the role and meaning of subsistence, and were unwilling or unable to accept the advantages offered by modern technology. The positive impacts cited by informants included: cheap or free electricity provided to Puna families, employment for family members in the future, and a general trend towards modernization throughout the district.

Desire to Return Home

An issue that was raised by lower Puna residents who were displaced by recent volcanic lava flows was that they had every intention of returning to their home when it was declared safe to do so or when the infrastructure was created to allow them to regain access to their property. Some homes were destroyed, others lost their access routes to the lava flows. Those who were displaced believed that their situation was temporary and they would someday return and resume their traditional way of life. The fact that they did not actually reside in Kalapana at the time should not be used as a reason to assume that the landscape and resources could be altered without having a negative impact. One informant who lost access stated:

> People don't believe we want to go back home. You'd be surprised at the amount of families that want to go back to Kalapana, Kapa'ahu, Kaimu. This isn't my home (subdivision near Pahoa). I'm a malahini here (foreigner). I'm ashamed to be here. I want to go home. I want to be able to live without having anybody bothering me. People don't understand what it means to take away a community. I would rather die than have to live someplace else.

Perceptions by Age

There were discrepancies between the perspectives and opinions of some older informants and some younger informants. Some of the older informants believed that HGP would provide jobs for younger Hawaiians in Puna. Because there wasn't much economic activity in the region outside of agriculture and subsistence, younger people who wanted to remain in the area would be provided a new employment option. Most of the younger informants, however, rejected the idea of geothermal development. It was not their "economy of choice" and they generally preferred living according to a subsistence-based economy and lifestyle. Some younger informants stated that their peers who had gone away to college planned to return to Puna after receiving their degrees and some job training. Younger people who had an aptitude for a formal western education wanted to leave Puna temporarily to gain new experiences and to see the world--but their commitment to Puna was very strong and they would eventually return. Informants claimed that the out-migration of talented youth should not be interpreted as a permanent loss of this sector, but as a means to ultimately bolster the technical "know-how" of the community, as they would return with new skills.

Some believed that it was unfair for older residents to make a decision about the future of Puna because their time had passed and younger people would have to live with the consequences of geothermal development. A number of the younger informants, some of whom were not living in Puna, stated that they wanted to raise their children in Puna and expose them to the same community and subsistence practices that they experienced growing up.

Even though it had been surmised that geothermal development would provide more jobs for Puna residents, many informants felt that the best jobs would go to outsiders who had specialized engineering skills and local Puna people would be left with the lowest-paying menial labor positions (e.g., maintenance, security). Some believed that these jobs were also the most hazardous and workers would be prone to injury.

Impacts on the Forest

A primary concern among hunters was how the clearing of the rainforest would destroy the habitat of the pigs. A few informants expressed specific concerns about the impacts of geothermal development on the pigs in Wao Kele O Puna. They believed that the destruction of the rainforest in this area caused by developing drilling sites, access roads, and even the leakage of harmful chemicals would mean the loss of a critical food source and cultural activity. Some hunters believed that noise and human activity at the existing geothermal sites served to drive pigs away from the immediate area. This was an indication that geothermal and wild game would not co-exist and that the more expansive proposed development would have devastating affects on this resource.

When discussing the issue of HGP impacts on the resources, practices, and beliefs of Hawaiians in Puna, many informants referred to what could be described as a cycle of change

or an entire system that becomes vulnerable because one part of it is damaged. These informants claimed that it was difficult to predict or assess impacts as separate aspects because natural and cultural phenomenon were integrally related. Changes in one part of the system would have reverberating affects throughout the system and affect each element and organism, including humans. For example, if the rainforest were damaged, the clouds carrying rain would disappear, thus the water that nourishes the plants and trees would cease, the animal life that depends on the forest and water for sustenance would perish along with subsistence activities. From another perspective, many informants believed that if humans exploited or did not malama the 'aina (take care of the land), the gods would no longer provide for them.

Concerns were also expressed about the decline in the native bird population which was thought to indicate that the forest was under duress.

Caretakers of the Land

Environmental impacts were difficult to assess without considering the cultural and spiritual impacts as well. Some informants believed that they were sanctioned to be the caretakers of their ancestral lands in Puna. Part of this notion was tied to a sense of responsibility they had to their kupuna (elders) who had taught them how to live as Hawaiians. The kupuna had passed onto these younger informants an ancestral knowledge that emphasized co-existence between humans and other natural elements. As the latest generation to possess this knowledge, they viewed themselves as the proprietors of Hawaiian culture. One informant stated:

> What I believe is, I live in this area and anything that happens above me [in Wao Kele O Puna] will affect me. Spiritually as well. There's more to it than just picking plants. Its more than what you can see. There is a spiritual aspect to it--a reason to leave certain areas the way it is, not abuse and taken away by man. Some areas have to exist the way they are, in order for the culture and people to remain alive. When ancestors die, they leave something behind, whether its visual or spiritual. I believe my ancestors put it [knowledge] into us so that the land would be able to survive. And we would still be able to keep in touch with being human.

Other informants took a more apocalyptic view. If their beliefs and practices were to be eradicated by geothermal and other "irreverent" forms of development, the culture and people would follow a similar path of decline. One informant who inherited the beliefs of his forbearers and was a Pele worshipper felt that it was his filial duty to continue this line of spiritual belief. If geothermal development detracted from the manifestations of Pele, then it might sunder the beliefs that he hoped to pass onto his children. He believed that the loss of that critical link between active worship and a living god would spell doom for Hawaiians.

Advantages Versus Negative Impacts

Some of the informants rejected the idea that geothermal development would provide a cheap source of energy. Even if it did, the cultural price they would pay would not be worth the advantages it might bring. One informant believed that the traditional way of life without electricity offered many advantages. She said:

> If somebody told me it will benefit you and give you electricity, we have generators, we have solar energy. The sun provides for us. When I was little we made sure we did our homework before it was 4:00, before it got dark. Our chores were done. Theres no such thing as T.V. being on just because it was there. We hardly ever watched T.V. We listened to the radio during the day time. At night, after you eat, you had family time. You'd pray and then you'd talk story about the day.
>
> Even when they offered us geothermal energy, we didn't hook up. We stayed with the generator. Only the people close to the highway went with electricity. They didn't have to pay extra. You grow accustomed to how the generator sounds. If geothermal was to happen, we would not have peace.

Technical Problems and Pollution

The technical problems experienced by previous efforts to harness geothermal energy also raised a great deal of concern among informants. The feeling was that if they couldn't master the situation on a small-scale, then why proceed to develop geothermal on a larger scale. Some informants mentioned that geothermal projects that have been successful at other locations on the American continent never had to contend with the type of force lying beneath Puna. They believed that existing technologies could not match up with the magnitude of the energy from Hawai'i's volcano. One informant shared:

> There is all kinds of things down there that comes out of the drilling. After 5-6 months the pressure and chemicals eat through the equipment and they have leaks. They do patch up work that doesn't really help. Ours [volcano] is so powerful, they don't know how to control it.

A major concern related to how chemicals released from leakage or blow-outs would impact wild and cultivated plants. Some informants expressed concerns about how flower growers would be affected in the long term. If the gases released were colorless and tasteless, and humans were manifesting symptoms of illness, then they deducted that plants were also being negatively affected. One fisherman who was at sea at the time of the latest blow-out said that from offshore he noticed that the ohia forest that lay downwind from the geothermal site had turned a dull grayish color. After about a week the foliage appeared to have recovered.

There were also concerns expressed about how possible contamination of the underground freshwater system would ultimately affect marine life that thrived in the places where cool, fresh water entered and mixed with ocean water. For example, opae ula, a minute red shrimp, required fresh and salt water conditions. They lived in anchialine ponds along the shoreline or in offshore areas where fresh water entered the ocean. They attracted fish that fed on them and were caught in fine nets and used as palu or chum in order to bring fish around. Some fishermen expressed concern about how these rather fragile organisms would survive if the underground water system were contaminated by chemicals released during geothermal development. And if these small creatures near the bottom of the food chain were affected, then the entire marine system might ultimately be affected.

Blow-outs at the geothermal plants were a primary concern among informants. A massive blow-out that could not be contained would mean the evacuation of everyone living in the district. One informant speculated that such a catastrophe would mean long-term displacement and more law suits than the state or federal government could cope with. Lower Puna informants were especially concerned because they were downwind from the drilling sites. The wind carrying toxic fumes would not be constrained or filtered because of the clearing of the forest for roads and drilling sites. One informant said that every night the wind comes down from the mountain, and during the day, the trade winds start blowing from the ocean. Symptoms resulting from exposure to chemicals released by geothermal were described as headaches, muscle aches, irritability, nausea, spontaneous abortions among pregnant women, and even having a metallic taste in the mouth. Although lower Puna residents expressed the most concern about the wind bringing noxious chemicals their way, informants residing in subdivisions upwind towards Pahoa expressed similar concerns about contamination. The winds could always shift direction and those living above the drilling zones also believed they were endangered. A great deal of concern was expressed about the close proximity of the geothermal subzones to Pahoa School.

Visual Impacts

The visual impacts were also raised as a concern by informants. Some speculated that utility poles and power lines would mar the scenic roads and view planes around Puna and if the power were transmitted through the Saddle Road, it would have a negative visual impact there as well.

Eletromagnetic Radiation and Marine Impacts

There were also concerns about the cable line that was projected to enter the ocean near Kawaihae Harbor. Fishermen were unsure, yet concerned about how the cable lines emitting electromagnetic radiation might disrupt fishing and impact migrating whales.

Poor Planning

One informant described the process of development in Puna as an exercise in poor planning. He believed that the development of the rainforest provided planners justification for allowing more development to go on. He said:

> We have a lowland rainforest that is being impacted daily. Not just by geothermal but by the influx of new people coming into the area. The land is no longer pristine because of all the subdivisions and papaya groves. That gives the State the idea that it is not worth saving. There is poor planning in letting people develop this area, and also wanting to develop geothermal.

MITIGATION

The concept of mitigation was a foreign one to many informants and based on the belief that natural or spiritual phenomenon existed as separate entities without regard for parallel or successive systems. A number of informants discussed natural and spiritual phenomenon in terms of one, holistic form. If one were to misuse the resources that were provided for humans by the gods, it would incur a negative impact throughout the entire natural order. Such an affect could not be mitigated by reducing the amount of the activity or through some other means of compensation. Wahi pana (sacred areas) were the source from which natural elements emanated, and disturbance of these areas would spell an end to the resource. For example, some informants mentioned that the rain and wind that were generated from the wahi pana from within the volcanic rift areas and essential to the perpetuation of life in Puna would cease to exist if disturbed and thus lead to a major decline in the range and quality of life.

Every informant in the Puna sample was posed with the question about how to mitigate the potential negative impacts of geothermal development. In general, the response to this question was "nothing." Some informants were not totally against geothermal development but had concerns about its safety record. If the quirks or difficulties could be worked out at the existing plants, the HGP should expand at a less ambitious level (than the 500 megawatts) and assessed in terms of its benefits to the community. None of the informants, even the proponents of HGP, believed that wholesale geothermal development should occur without some restrictions or profits returned to the community.

A variety of suggestions were made that dealt with prevention, mitigation, or the general management of natural resources in Puna. Informants provided the following responses when questioned about the mitigation/management of HGP[8]:

[8]Some of the points were themes or composites derived from various responses that had related content.

* Everyone within a 15 mile radius of the geothermal wells should get free electricity--especially if they had to suffer the consequences and O'ahu got most of the benefits.

* Hawaiians with genealogical ties to lower Puna should receive royalties of 10-20% from the profits made off of geothermal development.

* There should be a buffer zone between the drilling sites and where people live. In Puna there was no buffer zone because there wasn't room for one.

* The range and number of wells should be limited. Instead of opening the vast range throughout the three sub-zones for exploratory drilling, HGP should focus on one sub-zone and the number of wells should be limited to an acceptable level--according to what residents believe is appropriate.

* There should be strict monitoring of all aspects of the HGP. Air and water quality should be assessed regularly at designated points in time. Socio-cultural assessments should occur in phases following development. Development should occur in increments; not all at once.

* The State should encourage the development of solar energy for all homes in Puna and throughout Hawai'i. One informant reported that there were over 1,000 homes in the district that were solar powered and this should be a requirement for the entire state. It was viewed as an unlimited and natural resource that would lessen the need for projects like HGP.

* The State should encourage self-sufficiency in Puna and stop getting involved in projects that encourage dependency. Development should be consistent with Hawaiian culture and values. The modern way was too expensive. Alternative community economic projects would benefit everyone in the long run.

* The state/federal government should provide informational opportunities to Puna Hawaiians that address the proposed design of HGP and factual information regarding the extent to which the forest will be impacted.

* The state or federal people who are promoting geothermal should explore drilling possibilities on Lo'ihi. The Big Island was moving west, off of the hot spot. If it is too technologically challenging at this point to drill for energy underwater, then government officials should wait until Lo'ihi became an island.

* Geothermal development should not occur in areas where there was rainforest. If the proponents of geothermal were so adamant about developing this energy source, it should occur in Volcano National Park in areas where there was no forest or native residents.

* The management of natural resources should be done by native Hawaiians or they should at least serve as primary consultants in developing programs and policies. The people who have genealogical ties to lower Puna know best how to manage the resources. "We take only what we need." Management includes teaching about the moon phases and how it affects the ocean and planting. There should be a return to the old kapu system. That way Hawaiians could regulate their resources.

* There should be more effective management and education of tourism. Every tourist should be required to have a 1 hour of class on culture when they arrive in Hawai'i. Tourism development and activities in Puna should be regulated and limited.

The Puna Hui 'Ohana was formed in 1971 to provide community-based management of social and economic issues for Hawaiians residing in the district. In terms of geothermal development, the group has advocated for hiring local residents, job training, and corporate mechanisms for providing resources and services to the community. It also served to educate Puna residents about geothermal impacts as they related to other places (e.g., New Zealand) and mineral rights.

Some of the recommendations made by members of this organization included:

* Investors/developers should provide on-the-job training and opportunities for advancing/promoting local employees. This would serve to elevate Puna residents beyond the low-paying menial levels to high-tech or managerial levels which were mainly filled by out-of-state workers.

* Investors/developers should contribute monetary resources to community agencies--particularly the schools and hospitals. Small, rural facilities were largely neglected by the state and monies could be used to purchase equipment, supplies, art materials, fund special educational programs, etc. They suggested that some programs should be modeled after those in New Zealand that benefitted Maoris after geothermal development.

* Some of the royalties from HGP should be used to set up a community trust fund for Puna Hawaiians. Grants can be provided to native entrepreneurs and for scholarships. It can also be used to develop programs aimed at protecting native fishing, hunting, and gathering rights.

REFERENCES

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APPENDIX __
FISH SPECIES CAUGHT IN PUNA

Akule - is also referred to as the big-eyed scad; swims in school from place to place, but prefers large bays; the juveniles are referred to as halalu; common in the spring and early summer; are caught by hook or net.

Aholehole - is a small perch-like fish; the young are relatively common along sandy beaches, older ones inhabit rocky or coral areas; are found in salt, brackish, and fresh water; are caught by hook and net.

Ahi - also known as yellow-fin tuna; are often found in schools in deep water and are more common during the spring and summer; can weigh up to 200 pounds; are caught on hook and known for their immense strength.

Aku - is also referred to as bonito or skip-jack; tend to school in the deeper ocean areas and are more common during the spring and summer; can weigh up to about 25-30 pounds; are caught in abundance on hook and line.

Aweoweo - sometimes referred to as big-eye and are found to grow up to 12 inches long (a larger variety up to 20 inches); they have a brilliant red color and are generally caught at night on hook and line; have a prized white meat and are sometimes found in schools in the shallow reef areas.

Ehu - is a type of reddish snapper that swim in deeper waters; is a relatively rare fish, but found in waters surrounding the Big Island; is caught on hook and line and eaten a variety of ways--raw, cooked in imu, etc.

Enenue - is also known as a rudder or pilot fish and has a flat, solid body; is caught with spear or net, is difficult to catch because it leaps over nets; its habitat is the nearshore reef where it feeds on limu (seaweed) and its entrails have a strong odor; was one of the most popular fish with Hawaiians.

Kala - is also known as a unicorn fish because of distinguished horn-like spine on the forehead; it has a very tough scaleless skin that is used for small knee-drums; it inhabits the reefs, has a strong odor, and is a very popular fish among Hawaiians.

Kole - it is a small dark brown fish that is relished for its flavor; they live in schools in the reef areas.

Kumu - it is also known as a goat-fish and has a bright reddish color; it caught in the nearshore and deep sea regions; it is prized for its flavor and was used extensively as an offering to the gods.

Manini - it is also known as a surgeon-fish: it is a small yellow, black-banded fish that inhabits the nearshore reefs: is one of the most common and sought after fish that is caught with net or spear: they were traditionally caught by the thousands, dried, and taken inland for trade.

Moi - is also known as the thread-fish: is a silvery fish with whiskers that are caught with pole or net: it is the most delicious fish that was consumed by the ali'i and commoners were not allowed to eat it; they travel in large schools and lives in the foamy white-water along the waters edge.

Opakapaka - is also known as the blue snapper and inhabits the deeper regions of the ocean; they are generally caught by hook and line; they are a long, thick, fleshy fish that is traditionally preferred more by non-Hawaiians than Hawaiians.

Opelu - is also known as the mackerel scad: they live in large schools that inhabit offshore and bay areas: are perhaps the "staple" fish for Hawaiians: are generally caught by net or pole by the thousands and often dried.

Papio/Ulua - is also referred to as the crevally; the juvenile version (under 10 pounds) is referred to as papio, and the adult version referred to as ulua can exceed 100 pounds; they inhabit areas inside and outside the reef, are voracious feeders with great strength; are generally caught with pole or spear, and are prized for eating.

Uhu - is also known as the parrot-fish; they live in the reef areas and feed on coral; they are a favorite eating fish for Hawaiians and have soft, white flesh that is somewhat mushy; often caught by spear.

Uouoa - is also referred to as the false mullet; they are silvery fish that live in schools in the brackish or shallow reef areas and are generally caught by net: they have been described as a small, yet tasty fish.

'U'u - is also known as the squirrel-fish or menpachi; it often lives in schools in the reef areas; they bite vigorously and are caught in abundance by net or pole at night during the summer months; has a distinct reddish color.

Weke - are multiple species of surmullets; they live in schools in shallow waters with sandy bottoms; are caught by net, spear, or pole and noted for their tender white flesh.

APPENDIX __
OCEAN RESOURCES GATHERED IN PUNA

A'ama Crab - is a small, crab that scurries along the rocky shoreline: the rugged lava shoreline provides an excellent backdrop for these black crabs: they are easier to catch at night than during the day when they are alert: its meat is delicate and often prepared with Hawaiian salt and kukui nut.

Kupe'e - these sea snails prefer the darkest, moonless nights to emerge from the sand and crevices to crawl and feed on the rocks: the meat is a delicacy and the shells are made into necklaces.

Limu - is a generic term for a variety of subspecies of edible seaweed or algae: they are picked by hand and prefer certain water conditions (e.g., where freshwater mixes with saltwater); to prepare limu, one must clean them and they are often mixed with fish, opihi, etc.: they are also the primary food of the turtle and some species of fish.

Opae Ula - is a very small red shrimp that lives in anchialine ponds and where freshwater enters the ocean: during the day they sun themselves and are often scooped up and used as palu or chum to attract fish.

Opihi - is a limpid that lives in rocky shoreline areas that are pounded by waves; they have a very strong suction or grip when disturbed and must by quickly chipped from the rock; they are a delicacy that has become increasingly rare.

Ula - is also known as spiny lobster; they live in crevices along the rocky shoreline and are most active at night; they are usually grabbed by divers, but are sometimes caught by hook and line.

Wana - is also known as sea urchin: they live attached to rocks in the shallows and are caught by hand although getting pricked by their spines is very painful: the shell is cracked open and the orange eggs are consumed.

APPENDIX __
PLANTS GATHERED IN PUNA

A'ali'i - is a shrub that grows abundantly in the vicinity of Kilauea: it is sacred to Laka and Kapo, the goddess of hula: various parts of the plant were used by Hawaiians--the brilliant red flowers were collected and used in adornments for hula, and was used as ink and in dyes.

Awa kolo - is a member of the pepper family; it has a strong narcotic affect and was valuable medicine for Hawaiians as it was used as a basic ingredient in remedies for a variety of problems.

Flowers - the informants mentioned that they picked a variety of flowers that often grew along the trails edge in the forest; these flowers were used in making leis.

Guava - the young shoots are used to make medicine for remedying stomach problems such as constipation or for cleaning out the system.

Hapu'u - is also known as the tree fern and grows in the dense rain forest; it can reach enormous heights (over twenty feet) and was heavily harvested for its pulu or brown silky hair that was once exported for making pillows and mattresses; pulu is still used and the young fronds are cooked and eaten.

Ko'oko'olau - is a plant that grows from the shoreline to higher mountain elevations; is greatly valued by Hawaiians who stripped leaves from the plant and dried them, and made tea that was considered a tonic or blood purifier.

'Ie'ie - is also known as the climbing screwpine; the flower is used to make medicine that strengthens the body and alleviates aching backs and joints.

Laua'e - is characterized by a short rootstock from which arise flat, finger-like fronds; some varieties have brown spores on the underside, others do not; is used for hula adornments and lei po'o (head leis); it is also used for medicinal purposes to treat kidney ailments.

Lauhala - is also referred to as pandanus and lives in the coastal regions; its greatest value are its reddish-brown leaves that are used in thatched roofs, floor covering, mats, and for making baskets, hats, and adornments. The lauhala from Puna is known for its fine quality.

Maile - is a twining vine that bears smooth, shiny leaves that are arranged in twos, threes, or fours; it is one of the favorite plants of Hawaiians who use the fragrant leaves to weave leis. The Puna Maile in known for its strong fragrance.

Mamake - is a shrub that is found growing in open wooded areas; its leaves are picked are dried for making tea and dies, and the fruits are occasionally eaten by Hawaiians as a laxative.

Mango - is the fruit from trees that were planted by Hawaiians along trails in Puna: some informants stated that they still ventured along the trails and picked mango for consumption.

Niu - is also known as the coconut: most the trees grew naturally or were planted along the coast: the fruit provided materials for a multitude of uses--fibers were made into rope used in building and mending; the shell was used for drinking cups and art-work: and the coconut flesh and milk was used for haupia (pudding), and added to other dishes that were cooked.

Noni - is a small tree with large green leaves that is believed to be brought to Hawai'i by the progenitors of the Hawaiian race during their great migrations: the fruit is generally used medicinally and it made into a drink that is believed to cure a variety of problems including kidney and lung diseases: it is generally found in the low-lying coastal areas in Puna.

Ohia Lehua - is the commonest tree in Puna and ranges from the coast to the higher rainforest; is recognized by its green-gray leaves and clusters of scarlet or yellow flowers; the flower is considered sacred to Pele and are used along with new shoots of leaves in leis and hula adornments: its wood is used in building structures and making bowls and other art forms.

Orange - is the fruit from trees that were planted by Hawaiians along trails in Puna; some informants stated that they walked the trails and picked oranges from trees planted long ago.

Pa'iniu - is a member of the lily family; the skin of the plant was often stripped and used to make lei; the juices from this plant were also used to make medicine for the treatment of hemorrhaging in women.

Pala'a - is a fern that dwells on the forest floor; it has long pinnate fronds that are used for leis and hula adornments.

Palapalai - is a fern that dwells on the floor of the forest: it has long fronds that are used for leis and hula adornments.

Pink opiko - a plant that had medicinal qualities; it was used to make tea for women after miscarriage and helps strengthen the womb so the women can hold the fetus.

True koli - is also referred to as the castor bean plant; it is used in the treatment of diabetes and saves appendages from being amputated.

ETHNOGRAPHIC OVERVIEW OF SOUTHEAST MAUI

Southeast Maui

Proceeding from east to west, the proposed geothermal project on Maui directly impacts the moku (land sections) of Kaupo, Kahikinui and Honua'ula. According to current plans, the Geothermal submarine cable will surface at a land transition point along Huakini Bay, in Kaupo, just west of the primary canoe landing site at Nu'u Bay. From here, the electricity will be transmitted through overhead transmission lines, which cross mauka (mountainward) of the Pi'ilani Highway below the 200 foot elevation. At the 500 foot elevation the transmission lines will cross makai (seaward) of the Pi'ilani Highway at the 500 foot elevation. The route of the overland transmission line then parallels the island's South shore for a distance of approximately 20 miles, along the makai side of the Pi'ilani Highway at between the 500 foot and 1,800 foot elevations. The route, East to West, cuts along the scenic grasslands of Kaupo|, the scenic lava outcrops of Kahikinui, cuts through the Kahikinui Cultural Management Zone of the Department of Hawaiian Home Lands, and intersects the lower Kanaio Homesteads. It is situated East of the Kipahulu Forest Reserve, makai of the Kahikinui and Honua'ula Forest Reserve (elevation above 2,600-3,700 feet) and makai of the upper Kanaio Homesteads (elevation 2,800-3,400 feet).

The overhead transmission line will connect to a the submarine cable at a land-sea transition point located on the South shore at Kanahena, 'Ahihi Bay. This is west of the Natural Area Reserve of Cape Kina'u and the traditional landing at Keone'oio or La Perouse Bay in the Honua'ula district of Maui (U.S G.S. Topographic Map 1: 24,000 provided by Oak Ridge Nat. Lab.)

The southeastern coast of Maui consists of the southeastern slope of the Haleakala crater descending from the rim at the 10,000 foot elevation, down to sea level. It is an unspoiled scenic district of forests, pastoral grassland, lava outcrops and indigenous Hawaiian plants which survive in the ravines and gulches.

On modern maps, southeast Maui is shown as being located within the large districts of Makawao and Hana (DBED&T, 1992). Older maps (Wall, 1922) broke the area into the several smaller moku (also called kalana, or okana), of Honua'ula, Kahikinui, Kaupo, Kipahulu and Hana (Handy, Handy and Pukui, 1972: 510). One source discusses the history of land divisions throughout the islands and notes that the Maui land designations lack "the simplicity observed in othe other islands" (King 1935). However, an experienced surveyor, Robert King identified these land sections, as districts. Curtis J. Lyons, writing in 1876 noted the following:

On East Maui, the division [of land] in its general principles was much the same as on Hawaii, save that the radial system was better adhered to. The fact there is pointed out, to this day, on the sharp spur projecting into the east side of Haleakala crater, a rock called the "Pohaku oki aina," --land-dividing rock, to which the larger lands came as a centre. How many lands actually came up to this is not yet known (Lyons, 1875:111).

Within the districts of Honua'ula, Kahikinui, and Kaupo, are located smaller land divisions, or ahupua'a These sub-district land divisions usually extended from the sea to the uplands. Some extended inland only as far as the forest. Others swept up to the top of the mountain. A few went into the crater to meet ahupua'a from other districts at the piko (umbilical) stone, Pohaku Palaha, on the northern rim of Haleakala crater. The following is a list of the impacted moku and the ahupua'a within each district which will be impacted.

Honua'ula
Paeahu, Palauea, Keauhou, Kalihi, Waipao Papa'anui, Kaeo, Maluaka, Mo'oiki (fronting Molokini islet), Mo'oloa, Mo'omuku, Onau, Kanahena (sealand geothermal transition point at 'Ahihi Bay), Kualapa, Kalihi, Papaka-kai, Kaunauhane, Kaloi, and Kanaio (Kanaio Homesteads)

Kahikinui Land Section
Auwahi, Alena (Luala'ilua Hills), Kipapa, Nakaohu (Kahikinui House, Ka 'Ohana o Kahikinui), Naka'aha, Mahamenui, and Manawainui.

Kaupo Land Section
Waiopai, Nakula (sealand transition point at Huakini Bay), Nu'u, and Naholoku Pu'umaneoneo, Kou, Pauku, Puka'auhuhu, Hiki'aupea, Kaumahalua, Kaki'o, Poho'ula, Kepio, Niumalu, Pu'ulani (Kaupo Homesteads), Kahuai (Kaupo Homesteads), Ma'alo (Kaupo Homesteads), and Kalepa. (USGS 1993).

In an older map, the land section of Kaupo included the additional land subsection of Waiopai, between Manawainui and Nakula (Wall 1922). It is said that the Honua'ula district once extended from Keawakapu (Forbidden Harbor) at Wailea to Nu'u and inland all the way to the summit of Mauna Haleakala. However, the Hawai'i Territory Survey Map (Wall 1929) defines the Honua'ula land division to extend from Paeahu to Kanaio and the Kahikinui land division to extend from Auwahi to Manawainui.

The area from Kaupo through Honua'ula is rural, and is enjoyed by the local people of Maui as a pristine, visually unspoiled and gentle sloping landscape. There is an unobstructed panoramic view of the southern slopes of the Haleakala crater, the island of Kaho'olawe and the Big Island. This area, which has been impacted only by lava flows and grazing cattle and goats, is characterized by Hawaiian informants as a remote place where Hawaiians can reconnect with another time and their cultural roots. In this

part of Maui, from Nu'u to Kanaio, they engage in subsistence activities, such as hunting and fishing, using the moon, the sun, the stars, the tides, the weather and the seasons to guide them. Here they feel in contact with nature, physically and spiritually.

It is an area where individuals and families from the urban centers of Maui can go for recreation. Huakini Bay and Nu'u Landing are regularly frequented by weekend campers. During the summer, families camp there for weeks at a time. Here they feel a degree of self-reliance and independence. Several Hawaiian 'ohana (extended families) have managed to hold on to their traditional kuleana lands at Kanaio. Family members who have continued to live on the land are now building new homes for their children and grandchildren. At Kahikinui, where a longterm ranching lease has just expired, Native Hawaiians who have been on the waiting list for homestead and pastoral leases for years, anticipate being able to settle on the Department of Hawaiian Home Lands in the near future.

Wahi Pana (Sacred Places) Of Southeast Maui

The coastline of this section of Maui, much like Kaho'olawe, is windswept and relatively barren. Most of the mo'olelo (oral tradition) for southeast Maui date back to the era of the great migration from Tahiti and the long voyages between Hawai'i and Tahiti. In this, the mo'olelo of Kaupo, Kahikinui, and Honua'ula are also intertwined with that of the island of Kaho'olawe, which was originally dedicated to Kanaloa, the great Polynesian god of the ocean and of seafaring, and its Kealaikahiki Channel (pathway to Tahiti). Thus, the wahi pana or sacred storied places of southeast Maui reveal a history of the settlement of the islands of Hawai'i by the high chiefs of Tahiti as they were guided to Hawai'i by their great navigtors.

Nu'u means the high place, or second platform in a temple. It is a place of sacredness and it is a village site. The bay was so named because it was the landing place of Nu'u, a great kahuna navigator who was an ancestor twelve generations from the beginning of the race in the genealogy of Kumuhonua. (Beckwith, 1970:314) Kaupo means landing by canoe in the night. The name attests that the area was a noted landing for South-East Maui, particularly the bay of Nu'u.

Honua'ula means red earth. The sacred red color was restricted to the chiefly and priestly classes. Honua'ula was liked by the ali'i (chiefs) for its productive soil, climate and views. It was a sacred land of the ali'i.

It is reported that Kahikinui was named for the beloved homeland, Kahiki, of the first settlers who came to Maui from the South. (Ke Au Hou December 14, 1910 in Handy, Handy and Pukui, 1972: 508). Luala'ilua Hills, in Kahikinui means the place of double enjoyment, resting place for peace. Most of the Hawaiians in the Hana districts are said to trace their ancestry to Hawaiians who lived in Kaupo and Kahikinu before Cook's arrival.

The Mythical Era Of South-East Maui

The legends associated with the places of South and East Maui help explain in symbolic and poetic way how the basic elemental forces of nature shaped the landscap of the remote district and how humans adjusted to those elemental forces. The activitie of Maui, the demigod, in southeast Maui metaphorically explain the gradual quest c humans to understand the mysterious essence of the elemental life forces of nature i order to improve the condition of their life in the islands. The beauty of the stories an the poetry of Hawaiian legends and chants associated with the study area must be take into account, even if they do not appear in the abbreviated narratives contained in th EIS document.

The ocean along the shoreline in southeast Maui has abundant marine life and is a source of sustenance for many people. Fresh water seeps into the ocean at the shore and creates a productive ecosystem for a large array of sea life. The gods Kane and Kanaloa are credited with going about all of the islands to establish springs of fresh water. Kane and Kanaloa are also attributed with providing springs of fresh water springs along the southeast coast of Maui. It is said that they landed at Pu'u-o-Kanaloa (Hill-of-Kanaloa) a small hill just north of Keone'o'io when they first came from Kahiki. They dug a water hole by the beach and found the water brackish. So they went about 200 yards inland and dug another hole and created the spring called Ka-wai-a-ka-la'o. These gods also opened the Kanaloa fishpond at Luala'ilua-kai providing the brackish water that the need for spawning. (Beckwith, 1970: 64). From here, they went on to Nu'u and dug another spring there (Handy, 1972, 510).

Maui is the Hawaiian demi-god attributed with fishing the islands of Hawai'i up from the ocean, slowing the sun to make the days longer during the summer months, lifting the sky, and discovering the secret of how to make fire. He set out to accomplish his great feats from Kaupo, the district in which he lived with his mother Hina. It was in Kaupo, above the Ko'olau Gap, that Maui was able to snare the sun and force it to make a commitment to slow down during the summer months (Walker, 1931: 34-35; Beckwith, 1970: 229).

Maui fishes up the islands of Hawai'i when he goes fishing with his brothers in the fishing ground called Po'o directly seward rom Kiipahulu and in a line with the hill called Ka-Iwi-o-Pele near Hana. He used the magic hook Manaiakalani (Made Fast to the Heavens) and caught the big ulua of Pimoe. For two days they pull at it before it comes to the surface and is drawn close to the canoes. The brothers are warned not to look back. They do so. The cord breaks, and the fish vanishes. That is why the islands are not united into one (Beckwith, 1970: 230). Pu'u Pimoe is a remnant of the ulua fish.

Sometime in the mythical period, a particular species of wauke or mulberry plant is believed to have originated in Kaupo, according to the legend of Maikona, banished son of Konikonia and Hinaaikamalama. In the story, he wandered around and finally died at Kaupo. Out of his body grew a wauke plant (Broussonetia papyrifera) of a hairy kind like the hairy Maikona and useful for beating out bark cloth.

The practice of establishing ko'a to honor Ku'ula as patron of fishing together with his wife Hina were introduced in Hawai'i by his son A'ia'i. The Ku'ula and A'ia'i traditions related to Hawaiian fishing customs and practices originate in Hana and spread along the coast through Kipahulu and on to Kahiki'ula and to the other islands. Martha Beckwith offered the following account of the Ku'ula practice as it related to South Maui:

The god lived as a man on earth on East Maui in the land called Alea-mai at a place called Leho-uia (Red-cowry) on the side of the hill Ka-iwi-o-Pele (The bones of Pele). There he built the first fishpond; and when he died he gave to his son Aiai the four magic objects with which he controlled the fish and taught him how to address the gods in prayer and how to set up fish altars. . . . His son Aiai, following his instructions, traveled about the island establishing fishing stations (ko'a) at fishing grounds (ko'a aina) where fish were accustomed to feed and setting up altars (kuula) upon which to lay, as offerings to the fishing gods, two fish from the first catch . . . Leaving Hana, he establishes fishing stations and altars along the coast all around the island as far as Kipahulu. At the famous fishing ground (Ko'a-nui) in the sea of Maulili he meets the fisherman Kane-makua and presents him with the fish he has just caught and gives him charge of the grounds, bidding him establish the custom of giving the first fish caught to any stranger passing by canoe. Another famous station and altar is at Kahiki-ula (Beckwith, 1971).

Walker added more details to the legendary accomplishments of A'ia'i. According to him, A'ia'i raised the large stone Ku-a-lanikila at Puhele near Hamoa, and it became a ku'ula stone with the power to attract fish. The first ko'a, or fishing station, was established near 'Aleamai South-East of 'Alau Island a few miles out at sea. The second was so far out that can be located only by taking bearings from points ashore. A'ia'i taught people how to make nets and lines and showed them how the giant octopus could be caught by mean of the cowry shell. He then moved to Kipahulu, Kaupo, Kahikinui and so on around the island establishing ko'a and ku'ula everywhere. (Walker, 1931: 38-39). The Kanahena Heiau is reputed to have been built by A'ia'i in commemoration of his noted father Ku'ula-kai.

Pele and her family of the volcano fire clan lived on the southern slopes of Haleakala during Maui's mythical era. Pele made her first home on Maui in Pu'u Keka'a. When that crater was inundated by the ocean waters of her fiercest enemy, her sister Namakaokaha'i, Pele climbed Mauna Kahalawai and left her footprint there as Pu'u Laina (Ashdown, 1963-1977).

When the goddess Pele moved to Haleakala, the mountain enlarged it to its present size. Again, Namakaokaha'i found her. A great fight ensued in which the physical body of Pele was killed and her bones were scattered along the South and East coast of Maui at places known as Na-iwi-o-Pele (the bones of Pele) (Walker, 1931: 37). In her apotheosis, the spirit of Pele lived on in the more powerful form as a deity who could take on many physical body forms and she and her family moved on to Hawai'i island and settled in the Puna district.

About two centuries ago, Pele visited Maui and completed her Lalanipu'u, or row of foot hills in Honua'ula - Pu'u Naio, Pu'u Kalu 'Ola'a, Pu'u Lua Palani and Pu'u Pimoe. In 1736, Pele was still at Pimoe and she helped to herald the birth of

Kamehameha the Great . Although Haleakala remains dormant, there is still a lot of seismic activity from Pu'u Pimoe and over to Pu'u Ola'i, Earthquake hill, at Ku-Makena.

The latest eruptions of Haleakala run down the Southwestern corner of East Maui. One story explains that this eruption was due to a family who incurred Pele's wrath. The goddess swept down and consumed them and their whole village (Walker, 1931). The Pa'ea flow from 'Olapa and Palani is linked to one of the love affairs of the volcanic goddess. Pele fell in love with a married man who remained true to his wife rather than giving in to Pele's advances. Angered, Pele raged down from Palani, caught the man and turned him into a stone near Pu'u Mahoe at Ana Muki, the Twin Hills, just below the cave called Ke Kua Muki (Whispering of God). A lava stone there resembles a man's head and shoulders and it is shaped like a map of Maui. It is called Po'o Kanaka or Man's head stone. The lower part of the man's body is Pohaku Pa'ea in the sea of Keone'o'io at Ku-Makena. The 'Olapa hill is the wife.

The Wai'ola Flow begins with a kind woman named Wai'ola, or water of life. There was a drought and the people of Kahikinui were hoarding the water. An old woman came and the people laughed and told her she was old, and that it was time for her to die. Only Wai'ola, the kind one, gave her last ipu wai, her water gourd to the old woman who drank the water. Later, lava rolled over the people, leaving only Wai'ola's land and home safe. Then a big dog came. Wai'ola followed him to a beautiful pool of water, sparkling in the sunshine with kalo (taro), hala (Pandanus odoratissimus), mai'a (banana) and other fine plants. Wai'ola gave thanks, drank, andthen she realized that the dog was Poli, the black dog of Pele. She named the water Wai-a-ka-'Ilio, the Water of the Dog, in thanksgiving to Pele. There are now three springs in the lava flow named water of the dog. One of them is pumping water to the old Kahikinui House.

At Pu'u Ola'i, Earthquake Hill, Pele was jealous of the Mo'o Maiden of Kaho'olawe, Inaina, whose parents where Hele and Kali. Pele accused Inaina of trying to steal Lohi'au from her. In a fit of anger, Pele transformed the three into hills named after them. Kamohoali'i scolded her and pronounced the Kanawai Inaina there, meaning you must not say or do unkind things to others. From that time the people of Honua'ula observed that law. They named the area as Ku-Makena meaning you stand courageously, accepting the joys and sorrows of life bravely, even while mourning or rejoicing.

In another legend, Pele and Hiiaka journeyed to Haleakala from Molokai'i. Upon their arrival at this place they began digging a pit which they left open on the top of the mountain. The rocks at Hanakaieie, at Kahikinui, are those that were dug up by Pele and Hi'iaka. These are a noted cluster of rocks in an a'a rubble lava in the uplands (Sterling, 1966).

Earliest Settlement 0 and 600 A.D.

Hawaiian cultural sites said to be built by the Menehune were structures and features constructed by the original settlers of Hawai'i prior to the Tahitian migration in 1200 - 1250. Loaloa is a very ancient heiau that was built by the Menehune in the Manawainui ahupua'a to honor the ancient gods. It is the longest heiau on Maui.

Apparently, this southeastern section of Maui, which is less hospitable than the windward districts of the island, was settled as the population gradually expanded and eventually moved into the leeward districts.

Continued Settlement And Gradual Expansion 600 and 1100 A.D.

Throughout southeast Maui, the Hawaiians lived along the coast where the offshore ocean was abundant with marine resources and fresh water percolated out along the rocky shore or in springs in shallow bays. At the higher elevations, where the clouds daily cling to the slopes of Haleakala, the mountain forests are lush with native vegetation. In the uplands, just below the forest zone, the soil was excellent for dryland taro, sweet potatoes, medicinal plants, wauke trees for tapa making, all sorts of forest trees including mamane, kamani, koa, and other indigenous growth (Ashdown, 1969; Ashdown, 1977).

In dry areas the wiliwili and nene-leau trees provided light weight wood for canoe outriggers and poles for buildings. The pretty red seeds were used for making lei. The hau trees along the beach provided timber and bast for making cord, rope and certain hula skirts. Koa trees form the upper forest, and kukui trees in forest and villages such as Nahawale and Moanakala, provided hard wood, lighter wood, dyes, medicine, cordage and oil for lamps and polishing. The hala and halapepe used for matting (moena) and other purposes are gone and few remain in the upper forest today. The 'auhuhu plant was pounded and mixed with chewed bait to stun fish so that they could be taken by hand.

Hawaiian mauka-makai use of the ahupua'a in southeast Maui was linked to the planting cycle which was dependent upon the variations in rainfall according to elevation and seasons. In the uplands, where it usually rained daily, planting could be done year round. In the lowlands, planting was usually done in conjunction with the rainy season. When the rains moved on to the lowlands, each family cultivated plants at temporary habitation sites along the coast. This important seasonal cycle is documented in the interviews with Sam Po. According to him, even up through the latter half of the 19th century the Hawaiians in the district continued to live mauka or makai and plant in accordance with the annual rains. About one month before the rainy season began, they would carry dirt down from the mountains to the coast in lauhala baskets and fill holes in the lava in preparation for planting. Children also helped to carry some dirt in lauhala

pockets

bags. While on the coast, the Hawaiians would subsist on fishing and various cucurbits which were cultivated in the pockest of lava and nurtured by the rain. When the vegetables matured (Hawaiian watermelon, Ipu ololo, Ipu nunou-iani, pumpkin, and Poha or Ipu 'ala), they were consumed. After a period of about six months, just when the climate became dry, the families would make the return journey to their upland habitation sites (Sam Po in Chapman July 5, 1966: 4).

The ocean along the entire district from Ko'olau to Kaupo provided Hawaiians with various sources of food including numerous varieties of fish, crab, shellfish, and seaweed. They would gather shellfish and limu along the shore; go deep fishing in canoes; lay nets, including the large hukilau nets in the bays; dive; line fish; cultivate fish in ponds, and develop fishing grounds by feeding the fish at ko'a or designated spots in the open ocean.

Salt for the Hana district was gathered at Nu'u, where there were keheka (natural hollows) in the rocks in which salt (pa'a-kai) accumulated when the shallow ponds formed during rough seas and dried up in the sun. People would travel to Nu'u in the summertime to gather salt. Nu'ualo'a, in Kaupo, had several veins of 'alae, the red earthen mineral that is rich with iron. The Hawaiians commonly ground their salt together with alae to enrich it with iron (Several testimonies in McGregor, December 1989).

Fishing and ocean gathering was based on observation of moon phases and stars. When the stars where numerous and bright that was the time to go and look for the shellfish such as Kupe'e (Nerita polita) which usually hide during the day. This gathering was done in the utmost silence, lest the shellfish drop and burrow to hide themselves. Salt was gathered in the summer from the hollow stones along the shore. Families would gather an entire year's supply during the summer, dry it and store it in caves. Summer was the spawning time for the Manini, the Humuhumunukunukuapua'a, the Mullet and the Aholehole. The humuhumunukunukuapua'a could be used as subsitutes for the pig in religious ceremonies (Sam Po in Chapman July 5, 1966: 5-7).

Most of the families between Kaupo and Kipahulu areas were related to each others and exchange and sharing was common and expected. There was an Hawaiian riddle for Kaupo and Kipahulu which linked the two districts together and noted the importance of coping with famine during drought times by eating sprouting potatoes left in the old mounds to growth to maturity (McGregor, December 1989).

In the drier areas of Kaupo, Hawaiians planted sweet potatoes, pumpkins, and dry taro for home consumption. The sweet potato was the staple food for the Kaupo families. Even their poi was made out of sweet potatoes.

The Hawaiians of Kaupo obtained fresh water from numerous springs in the area such as Punahoe and Waiu. In Manawainui Valley, there were several large springs until landslides covered them up and broke the pipelines carrying water to households.

Kahikinui was arid along the coast but well-forested above the cloud line. Fishing was good along its rugged shores. Hawaiians lived in isolated communities on the broken lava, scattered from one end of the district to the other close to the sea or slightly inland, wherever potable water was found in a brackish well or a submarine spring offshore. The Hawaiians of Kahikinui developed garden holes also, but their primary cultivation area was upland, just below the forest zone and where the rainfall was plentiful. There, they developed upland plots of dry taro and other edible plants (Handy, Handy and Pukui, 1972: 508).

In Honua'ula the lower uplands, above the inhabited area and where the rains fell daily was the main cultivation zone. The eastern and coastal portion of Honua'ula was thickly populated by Hawaiian planters (Handy, 1972). The entire area of Honua'ula was highly cultivated. Handy tells of sweet potatoes from Kula to Nu'u, and in the Honua'ula area of Maui from Keawakapu to Nu'u. It is important to note that later, when lava flows covered the land, people did not move away. Instead, they dug deep holes in the lava and transported soil from the uplands to fill them up. The earth was dug up and the soil passed in baskets from hand to hand along a row of people to fill the "garden holes" in the lava. In Honua'ula, structures of all sorts can be found where such farming was done after a lava flow. Today called "footprints," there are garden holes of all sizes that can be found in the lava flows of Honua'ula, Luala'ilua, and at Pu'u-o-kali. High chief, Kiha-a-Pi'ilani is said to have planted sweet potatoes for the starving people, doing the work of eighty men in one day. Even the gulches were planted with certain types of vines suited to that type of terrain.

Migration, Ruling Chiefs And 'Ohana 1100 and 1400 A.D.

Puaneane is the hill in Kahikinui where the Santa Ynez church ruins now stand. This place is also called Pu'u Aniani. The great navigator Hawai'iloa-ke-Kiwa is said to have named this hill for his father, the great navigator Anianikalani, and the surrounding area for his homeland across the horizon, Kahiki Ku, "Tahiti over the horizon" or Kahikinui, the "Great Tahiti". Kahikinui is also the name of a navigational star, said to be named for one of the eight steermen of Hawai'iloa.

Aniani, means mirror, shining like glass, clearness, travel swiftly, named by Hawai'iloa after his father, Anianikalani, the noted navigator. Pohakea, the white stone there means fading night.

The navigator, Hawai'i Loa is credited with naming the Ke-aia-i-Kahiki sea and the Southwest end of Kaho'olawe. He utilized a "navigational triangle" to get a bearing for the long voyage from Tahiti to Hawai'i. The land points for the triangle were Ukumehame and Mauna Hoku'ula on West Maui: Pu'u Aniani in Kahikinui on East Maui: and 'Upolu Point on the Big Island. He returned across from Kahikiku or the horizon from whence he came, and brought settlers with him and remained there. Many of the temples and the fishponds in southeast Maui are attributed to this era.

He then returned to his homeland and brought others from Kahiki, and at this time named the area of Kahikinui on Maui, and the Guide Stars for his eight helmsmen, or navigators. These crewmen were Makali'i for whom the Pleiades are named: I'ao, name of Jupiter as a morning star: Hoku'ula, which is Alderbaran: Mulehu which is one name for Venus. Mulehu, Polo'ula and Poloahilani are three stars in a triangle, said by some to be Vega.

In the migration legend of Mo'ikeha to Hawai'i his party first touched at the easternmost point of Hawai'i, cape Kumukahi, and the younger brothers of Moikeha, Kumukahi and Ha'eha'e remained in Puna. Among the others in his family, the kahuna Mo'okini and Ka-lua-wilinau made their home at Kohala; Honua-ula landed in Hana on Maui; the sisters Makapu'u and Makaaoa landed on O'ahu. The rest of the party went on to Kaua'i. His son, La'amaikahiki, came from the South at a later time and settled for a while on Kaua'i. He then moved over to Kahikinui (Great Tahiti) on Maui, which is so named in his honor. But finding it too windy, he moved on to Kaho'olawe and finally sailed from there back to Tahiti (Walker, 1931). Fornander offered the following translation of part of the La'amaikahiki history:

> As the place [Kahikinui, Maui] was too windy, Laamaikahiki left it and sailed for the west coast of the island of Kahoolawe, where he lived until he finally left for Tahiti. It is said that because Laamaikahiki lived on Kahoolawe, and set sail from that island, was the reason why the ocean to thwest of Kaho'olawe is called 'the road to Tahiti (Fornander, 1916 - 1919: 514-519).

Nu'u and his wife Nu'umea or Nu'umealani, or the Female who propagates from heaven, arrived at Nu'u on Maui with their canoe called the canoe of Kane. Nu'u was the great kahuna, the priestly one who offered sacrifices who was associated with the era of overturning and the time of the great flood. His legend has a biblical analogy to Noah and the Ark. In the genealogy of Kumuhonua, Lu-a-nu'u son of Nu'u, also called Kanehoaani, was the ancestor of the Mu and the Menehune people. Nu'u came after the first Hawaiian from a foreign place and after him came Hawai'i Nui or Hawai'iloa (Beckwith, 1970: 307).

The ancestors of the Mo'i (kings) of Maui were Paumakua, a southerner voyager, possibly a Tahitian (975 AD or 1200 AD), and Haho (1,000 AD or 1225 AD). But the districts of Ko'olau, Hana, Kipahulu and Kaupo were often under different Mo'i not

closely connected with the rulers of West Maui (Walker, 1931: 13 &14).

La'akapu of Honua'ula married Kahoukapu who was a chief of Hawai'i in the 12th century A.D. The prayers of the kahuna Pa'ao saved her son, whom she named Kauholanuimahu meaning like a beautiful flower, or dream unfolding. When her husband died she returned to Maui where she gave her Honua'ula lands to her beloved son. When his beautiful wife proved unfaithful to him, Kauholanuimahu left the Big Island and went to Maui and took up residence. He ruled from Makena to Nu'u. He helped the people of the villages, particularly at Maonakala where his mother dwelt by Keone'o'io. Kauhola rededicated the family fishponds there. He also built the heiau (temple) mauka of Keawala'i Hawaiian Church at Makena.

Ruling Chiefs 1400 - 1700

The history of the Hana District in East and South Maui involves many chiefs of the island of Maui and the island of Hawai'i. The Hana District can be characterized as a territory over which there has been contention for centuries between the chiefs of Maui and Hawai'i. A series of notable events and battles by chiefs are associated with various localities in the Hana District.

The earliest war between the island of Maui and the island of Hawai'i is attributed to Hua'akapuaimanaku, high chief of Maui, probably a descendent of the southerner Hua family from which Paumakaua and Haho came. Hua'akapuaimanaku resided at Hana. He built a heiau at Honua'ula. After his successful war on Hawai'i he returned and built another heiau, Kuawalu (Walker, 1931: 25).

High chief Kakaalaneo often sent 'Ele'io, a famous runner, to get some 'awa for him at Hana and return to Lahaina before dinner time. On one of his trips he met the ghost Ka'ahuali'i, who gives him chase but 'Ele'io outruns him. Another time he sees a beautiful girl near Olowalu and he pursues her around the Southeast point of Maui to Hanamanuloa in Kahikinui. At the entrance to a pu'o'a, or bamboo tower on which the bodies of the dead of the higher class are exposed to the elements, 'Ele'io catches the girl and learns she is only a spirit. She senda him to her home to procure a hog, kapa, fine mats and an unfinished feather cloak from Hawai'i. This he does, and he goes to Hana for 'awa near Ka'eleku. He returns, and after much effort he restores the girl Kanikaniaula to life. During a feast the feather cloak, a fathom and a half square long is completed to two fathoms and 'Ele'io sets off with the girl to Lahaina. He escapes death by telling high chief Kaka'alaneo his story, who pardons him and marries the girl (Walker, 1931: 40).

Kiha-Pililani is believed to have reigned in the last half of the 15th and the beginning of the 16th century. He undertook the project of connecting the entire island with a network of trails on the advice of his sister's husband, 'Umi-a-Liloa, high chief

of Hawai'i who developed the network of trails on that island. The completed trail, he was advised, would aid his people in their travels, particularly across dangerous roads that led down into and out of steep valleys, and it would be a work that would give the chief a prominent place in history, as indeed it has. The improved roads also gave Kiha-a-Pi'ilani quick access to all parts of his kingdom, should any dissident group take action against his rule. Southeast Maui was accessed in ancient times by a system of trails. Long distance trails run laterally along the shoreline and across the uplands. Short distance trails run mauka-makai within and bewtween ahupua'a:. The Pi'ilani paved road, built by Kiha-a-Pi'ilani, a son of High chief Pi'ilani, still exists along portions of the impacted southern coastline of east Maui from Keone'oi'o to Nu'u.

The original Kiha-a-Pi'ilani trail is approximately four feet wide between curbstones. It was paved with water-worn stones and is, therefore, "user friendly." The trail that Kiha-a-Pi'ilani caused to have built would be between 350 and 450 years old today. 'O'io'aina are the terraced resting places along Ke-alaloa (the long trail), or other old trails. The Pi'ilani trail is marked on the earliest maps of Maui as having circled the entire island.

Branching trails extended from the Pi'ilani trail in the Honua'ula area, from Keawakapu to Nu'u, up to Pu'u Ninole and Pu'u Palani, through Kanaio and up to Pu'u Pane, and so on. A trail named Kekua-waha'ula derives its meaning from Pele's Smiting Red Mouth. She smites people who speak evil, from her listening "blow hole' in the waiting Hill, Pu'u Okali in the Keokea 'Ili (land division) in Honua'ula. Near the church in Kanaio the trail entered the area known as Maahi and into the forest of upper Auwahi where such plants as the 'akalea grew. It was used to make heavy tapa cloth. The old road is located mauka of the government road at Kahikinui. Two trails crossed from Kanaio to Keone'o'io. The upper, or mauka one was through Pu'u Pane and down toward Luala'ilua hills and across to Kaupo. The makai trail went among the seacoast villages. Lines of stones six feet apart mark the trail on grassy areas and finer cinders and pebble make up the road bed on 'a'a lava flows. A trail from Kaupo went up into the Haleakala Crater through the Kaupo Gap. The 1929 maps by Walter Wall show additional trails around Kanaio northwest to Keokea and Southeast to Manawainui. Mauka-makai trails are also at Hokukano and Luala'ilua and at Waiopai (Ashdown, 1963-1977).

The Eve Of European Contact

The chief Kekaulike (1700 AD) resided at Kaupo where he built the great heiau of Pu'umaka'a at Kumuni and Kanemalohemo (Keakala'auae) at Popoiwi near Mokulau in Kaupo The heiau was used as a Pu'uhonua (place of refuge) (Walker, 1931: 25,124). The Loaloa Heiau on Kaupo Ranch is thought to have been rededicated by King Kekaulike about 1730. Kekaulike left his youngest son, Kamehamehanui, as ruler when he died in 1736 at Lelekea near Kaupo.

Alapa'inui, King of Hawai'i, landed a large force at Mokulau near Kaupo to raid Maui, but he concluded peace when he discovered that his own nephew Kamehamehanui (1736 AD) was the new Mo'i (king) of Maui (Walker, 1931:16).

Honua'ula was the residence of Queen Kalola, a daughter of King Kekaulike, who ruled Maui until 1736. She was the last ali'i to pronounce the kapu of the Burning Sun. Only the Maui ali'i had this Kapu of the Burning Sun, hence Heleakala or Maui in the Pathway of the Sun[1].

In Honua'ula, high chief Kahekili (1765 if Kahekili II; 1475 if Kahekili I) gave permission to a chief named Ku-Keawe to run pigs in the uplands. This chief also took his neighbors pigs. He was killed in a battle raging through the region. His body was propped up facing the sea of Palaue'a, between Wailea and Makena as a warning and peace was restored. Theft then ceased on Maui (Ashdown 1969-1977).

When high chief Kalani'opu'u came from Hawai'i to invade Maui in 1775, his canoes lined up on the beaches from Honua'ula to Ka Ma'alaea Bay. His warriors ravaged the coast from Kaupo to Kama'alaea Bay. Kahekili rushed two detachments in support of the Kaupo people and in the bloody battle near the point of Ka-lae-o-ka-'ilio routed the forces of Hawai'i. Kamehameha was one of the heroes of this battle. (Walker, 1931:22 & 27). This campaign was called "Kalaehoho'oa" because the natives where unmercifully beaten on their head by the war clubs of the warriors from Hawai'i. At Kanahena his warriors are said to have beaten and broken the backs of the people. Alalakeiki is a burial cave at Nu'u which was still in use when it was partially destroyed by road builders, as were the beautiful petroglyphs in them. During the raid of Kalani'opu'u the Maui men could hear the weeping of old folks, women and children from the cave of Nu'u. By the time they came back from the battle their people had died in the cave and that it is how it came to be called Alalakeiki (crying child) and became a burial cave. Kalani'opu'u captured the Ka'uiki Hill fortress and held Hana and Kipahulu until he was finally repulsed.

The third invasion by Kalani'opu'u took place in 1776. First landing in Honua'ula, he ravaged it from Keone'o'io to Makena, then sailed to Kihei (Walker, 1931: 28).

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[1] When referring to that time the name Mauna Ka'uiki is used because it means the First Fire Glimmering. Even when Pele moved to Halema'uma'u on Hawai'i this kapu did not go with her because the prophecies said that Pele would return to punish wrong doings.

Contact and Monarchy

After contact (post-1778) and throughout the nineteenth century, the Hawaiian population in the remote and arid southeast Maui districts gradually moved into Hana. Most of the Hawaiian people in the Hana district are said to trace their ancestry to Hawaiians who originally lived in Kaupo and Kahikinui prior to Cook's arrival.

Kahekili, the last ruling chief of Maui, was tattooed on one side of the body to show that he belonged to the family of the thunder god, Kanehekili. This god was an 'aumakua on the island of Maui for certain families (Beckwith, 1970: 48). In 1781 Kahekili marched on Hana by way of Ko'olau and Kaupo and laid siege to Ka'uiki Hill. By cutting off the supply of water from surrounding streams and springs, the Hawai'i garrison was forced to surrender in 1782. The district of Hana was thus restored to the control of Maui (Walker, 1931: 29).

Kamehameha, the high chief of Hawai'i, in 1786 sent an expedition under his younger brother, Kalanimalokulokuikapookalani, to retake the districts of Hana and Kipahulu. Kamohomoho was sent by Kalanikupule to drive out the invader and a fierce battle was fought on the Kipahulu side of Lelekea Gulch and at Ma'ulili, until the Maui warriors prevailed (Walker, 1931: 30).

La Perouse anchored off Honua'ula at Keone'oi'o Bay on May 28, 1786. He described a large village there.

In 1790 high chiefess Kalola, the sister of Kahekili, ali'i nui of Maui was living in Honua'ula at Nahawale village with her husband, the chief Kaopuiki, near Keone'o'io. This is the chief who was mistreated by Metcalf and the crew of the Eleanora. In retaliation the chief stole the longboat and broke it up for its iron parts. His men also killed the crewman who was in the boat. Seeking vengeance, Metcalf killed over one hundred natives at Olowalu. The high chiefess Kalola, in 1790 pronounced for the last time the Kanawai Mau'u Mae, or the Withered Grass Law. The penalty for violating this proclamation was burning to death. In the aftermath of the Oluwalu Massacre, in order to prevent any further misery, high chiefess Kalola issued a kapu that no one should be seen abroad; everyone must remain in their homes; there was to be no talking, no animal noise, no association with travelers or visitors.

Kahekili and his brother Kaeo, King of Kaua'i, waged ~~was~~ war against Hawai'i. Kaeo stopped at Hana to recruit warriors. Kahekili went to Kaupo and they launched their offensive from those two places. They lost to Kamehameha in 1791 (Walker, 1931: 32).

Kamehameha is said to have landed at Ka-lae-o-ko'Ilio in Kaupo on a raid from Hawai'i. There was some kind of skirmish when he landed, and he put up an oar to save his face. The act finished the tapu which prevented men and women to travel together

on the road. At the place called 'Aiali'i (where the chief eats), in Kaupo, the Hawai'i chiefs ate their first meal (Walker, 1931: 43).

Pamano was a noted chanter. He was born in the village of Kaipolohua in Kaupo. Lona was the father, Kanio, the mother and Waipu his brother.

Some sections of the Maui trail system are also called the Hoapili trail after Governor Hoapili of Maui, who died in 1840. Hoapili's connection with the Maui trail system along this coastline was made when Hawaiians, who became Catholics in the 1820s and '30s, were persecuted as idol worshipers, jailed and made to work building roads. From Honua'ula to Kahikinui and Kaupo the road was built by convicts, under the Lua'ehu Laws of Hoapili ma. This road was built without sledge hammers or other tools. All that was used were bare hands and the 'o'o (digging stick) (Ashdown 1969-1977). Hoapili even made his own son, Kaukuna Kahekili, and other chiefs go cut down trees in Kahikinui for having broken a law. Beginning at Keone'o'io and going east for several miles over a large lava flow, the Hoapili trail is twelve to fifteen feet wide between curbstones. Much of it covers the original Pi'ilani trail. In contrast with the original Pi'ilani trail, the Hoapili trail is very straight for miles, is wider and is paved with rough a'a lava rubble, rather than water-worn stones. Whenever King Kamehameha III went traveling on horseback on his routine visits around Maui, probably in the 1830s, Governor Hoapili had the trail covered with thick layers of pili grass. Much of the original Pi'ilani trail remains between Keone'oi'o and Hana and beyond, although a great deal of it is was incorporated into modern road construction.

A sense that the East Maui District in the 1800s was well populated can be presumed by the letters of missionaries who estimated the number of missionaries needed on the basis of the level of the population in a given area. The missionary Green described the need for missionaries based on an assessment of the extent of the population in each district in 1834. The conclusion was that Kula, Hana, Honua'ula, Kaupo, and Kipahulu were well populated districts while Kahikinui had only a few inhabitants. The following is how Green assessed the population in southeast Maui:

- Kula district continuous country, not densely populated, but containing many inhabitants. Two missionaries needed here.
- Honua'ula district: warm but populous, need two missionaries.
- Kahikinui district: small and poor few inhabitants, and scanty means of living. One vast bed of lava, few inhabitants are obliged to go far into the country to cultivate their food.
- Kaupo district: similar in appearance to the Kipahulu district, but larger and more populous. Small vessels frequently anchor here. Missionaries are needed here.

- Kipahulu district: rough country, fertile, and populous. In need of a two missionary families and a missionary station.
- Hana district: large populous densely inhabited in need of four missionaries.

(Green. Dec. 1835)

The Honua'ula District. had 215 readers attending the Missionary School in 1834. A permanent mission station was established in Hana in 1837. Mission schools were established in 1850 and churches were built in the 1850s and 1860's'. The first sugar mill in Hana was established in 1849.

Insect pests, venereal diseases, and epidemic diseases were brought by sailors on foreign ships. These diseases decimated the population of Hawaiians, particularly in the rural districts, because of lack of Western medicine to cure the Western diseases. Many Hawaiians were sick, in need of assistance, and dying because of lack of immunization to newly introduced diseases in East Maui in 1837 (Green. Dec. 1835). In 1844, there was a severe epidemic of colds. In 1848, a measles epidemic wiped out a third of the population of Hawaiians. In Kipahulu, in a family of 13 members, 9 died. In 1853, a smallpox epidemic swept through the Hana District, including Kipahulu and Kaupo and many people died, according to Hawaiian historian Samuel Kamakau. In Kipahulu in 1857 a woman gave birth to ten children, but lost all them in childhood to foreign diseases (Kamakau, 1961: 236, 237, 418).

The establishment of ranches in the area contributed to the dislocation of Hawaiians from these areas. The ranches bought, leased, or adverse possessed the lands in the districts for raising their cattle. The cattle destroyed the native vegetation and contributed to the erosion of topsoil into streams and the ocean undermining the agricultural quality of the land and the productivity of the ocean.

Santa Ynez Catholic Church dates back to the voyage of I'olani Liholiho, Kamehameha II, to Europe and the conversion to Catholicism of a courtier named Joseph Kanui who studied in France and then returned to Maui to teach Catholicism.

A shipwrecked Spaniard or Portuguese, Antone Pico married a Hawaiian chiefess and built the Kahikinui House. Vierra Marciel arrived on Maui by shipwreck and married the sister of Pico's wife who owned what became Kaupo Ranch.

In 1837, Catholics who did not convert to Protestantism were pa'a kaula (tied up with ropes) at Santa Ynez Church, arrested, and force-marched to Hana and on to Wailuku for trial. Judge Mahune could not try them because by the time they reached the courthouse in Wailuku the crowd travelling with them had swelled to include 2,000 people. Kamehameha III granted religious freedom under the first Bill of Right in 1839.

Ka Mahele in 1848 and the Kuleana Act in 1850 established a system of private property ownership of all the lands in Hawai'i. Under the new land system 984,000 acres remained as Crown land; 1.5 million acres became government land; 1.6 million acres became the privately owned lands of 245 chiefs; and 28,600 acres were granted to 11,000 commoners. While there were no "Crown Lands" in the Districts (moku) of Honua'ula, Kahikinui or Kaupo when the lands were divided in the Mahele (division) of 1848, there were a number of ahupua'a (sub-district land divisions) designated as "Government Lands" within these Districts, as indicated in the Indices of Awards (Office of the Commissioner of Public Lands, Territory of Hawai'i, 1929). The following table shows the government lands which are located in area where the Hawai'i Geothermal Project sea-land transfer stations and transmission line will run.

Table __ Government Lands in the Impacted Districts

Names of Lands	Ahupua'a	District
Kahikinui *	Ka Moku (District)	Kahikinui
Kalihi 1*	Ahupua'a	Honua'ula
Kalili 2*	Ahupua'a	Honua'ula
Kaloi*	Ahupua'a	Honua'ula
Kanaio*	Ahupua'a	Honua'ula
Kaunuahane*	Ahupua'a	Honua'ula
Kualapa *	Ahupua'a	Honua'ula
Maluaka	Ahupua'a	Honua'ula
Mohopilo 1	Ahupua'a	Honua'ula
Mohopilo 2	Ahupua'a	Honua'ula
Mooiki *	Ahupua'a	Honua'ula
Mooloa *	Ahupua'a	Honua'ula
Moomuku *	Ahupua'a	Honua'ula
Onau *	Ahupua'a	Honua'ula
Paeahu 1	Ahupua'a	Honua'ula
Paeahu 2	Ahupua'a	Honua'ula
Papaa	Ahupua'a	Honua'ula
Papaka *	Ahupua'a	Honua'ula
Waipao	Ahupua'a	Honua'ula
Kaupo *	66 Ahupua'a	
Ka Moku	Kaupo	Kaupo *

Na ku o Kaupo i koe i keia Mahele ana Kaupo

Note:

1. No "Crown Lands" in Kahikinui Moku. Honua'ula or Kaupo.
2. * Government lands most directly impacted by the Geothermal Project and its transmission line and sea-land transfer stations.

Source: Office of the Commissioner of Public Lands of the Territory of Hawaii. (1929). Indices of Awards made by the Board of Commissioners to Quite Land Titles in the Hawaiian Islands. Honolulu Territorial Office Building.

The Board of Commissioners to Quiet Land Titles, which was set up under a law passed by the Hawaiian Government in December 1845, began hearing testimony on selected claims registered by non-Hawaiians early in 1846. The division of lands between the King and about 250 chiefs took place between January 27 and March 7, 1848 and resulted in what is known as The Mahele Book, in which is recorded the names of the lands belonging to King Kamehameha III and the names of the chiefs and the lands that they claimed. At the end of each mahele (division), a phrase was added that protected the rights of the hoa'aina, who were the farmers living on the lands (ahupua'a and 'ili) taken as private property by the king and the chiefs.

On March 8, 1848, the King separated his privately owned King's Lands (approximately 980,000 acres) from the Hawaiian Government Lands (approximately 1,500,000 acres). The lands that went to the chiefs were approximately 1,600,000 acres. Their claims, however, were subject to application to the Board of Commissioners for a Land Commission Award.

Lands were not awarded to Hawaiian farmers until two and a half years after the the February 14, 1848 deadline for farmers (hoa'aina) to register their claims, and approximately one month short of two and a half years after the mahele, or division of lands between the King and the Chiefs had been completed. When the Kuleana Act was passed in August 1850, only then did the Board of Commissioners begin to hear testimony on claims registered by Hawaiian farmers. Based on the claims and testimony, the Commissioners awarded or denied awards of lands directly to Native Hawaiians. A summary of awarded land for each of the impacted ahupua'a is shown in Table __ Summary of Acreage of Land Commission Awards in Impacted Ahupua'a: These kuleana (privately owned) lands, their acreages and the ahupua'a in which they are located are listed in Table __ "Land Awards to Native Hawaiians in the Impacted Districts."

Table __ Summary of Acreage of Land Commission Awards in Each of Three Impacted Districts.

Land Commission Awards in the Honua'ula District include 1,320.95 ac.
Land Commission Awards in Kahikinui District include 5,292.32 ac.
Land Commission Awards in Kaupo District include 12,475.70 ac.
Total Acreage of Land Commission Awards in Impacted Districts 18,988.97 ac.

Most of the parcels of lands awarded to Native Hawaiians were very small, containing only a few acres, or even fractions of an acre. The notable exceptions to this were the following awards to chiefs which were as follows:

Table __ Three Land Commission Awards to Chiefs in Three Impacted Districts

(1) Within the Ahupua'a of Keauhou in the Honua'ula, awarded to Mai, 853 ac.
(2) The entire Ahupu'a of Auwahi (Auahi) in Kahikinui, awarded to Princess Ruth Ke'elikolani, 5,280 ac.
(3) In the District of Kaupo|, the entire Ahupu'a of Nu'u, Chief Kalaimoku, 12,140 ac.

Total acreage awarded to chiefs in three impacted districts 18,273 ac.

Subtracting the Land Commission Awards to chiefs (Table __) from the total number of awards in the impacted ahupua'a of the three impacted Districts (Table __), the remaining acreage for awards to the hoa'aina, or Hawaiian farmers, totalled 715.97 acres.

Regardless of the parcel size granted to them, Native Hawaiians, tenanats of an ahupua'a, retained their traditional mauka-makai access and gathering and fishing rights. These rights are spelled out in the Kuleana Act of 1850 and are sustained in the Revised Laws of Hawai'i.

> Where the landlords have obtained, or may hereafter obtain, allocial 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 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 (Haw. Rev. Stat. Section 7-1 (1985).

The following lands were surrended to the government by the Native Hawaiian chiefs, who had participated in the Mahele of 1848, in lieu of a commutation fee to the government for the purpose of clearing their titles to the remainder of their awarded land parcels:

(1) - Kanahena lands, in Honua'ula surrended by R. Ke'elikolani
(2) - Kukuoiu lands 1 & 2; Pualaea and Waiohole in Kaupo; surrendered by M. Kekauonohi
(3) - Kahikinui lands surrendered by Lot Kamehameha.

These land commutations explain in part the large land holdings in the area owned by the government. When the entire district of Kahikinui was turned over to the Hawaiian Homes Commission, the Commissioners elected to lease large acreages to non-Hawaiian entrepreneurs for ranching, instead of providing land leases to the Native Hawaiians, as was the primary intention of the Act.

The following table summarizes the acreage awarded in each ahupua'a of each of the impacted three districts, see Table __. **Land Commission Awards to Native Hawaiians in the Imipacted Districts of Honua'ula, Kahikinui and Kaupo**

.c.Table __. Land Commission Awards to Native Hawaiians in the Impacted Districts of Honua'ula. Kahikinui and Kaupo:

Honua'ula District

Location	Acres
Kaeo	57.13
Kalihi	0.77
Kanahena	75.81 & Ap.7
Kanaio	43.89
Keauhou	923.37
Keopuiii	0.25
Mooiki	27.54
Mooloa	30.32
Moomuku	25.53
Nau	0.11
Naulalo	0.25
Nauluna	3.64
Paeahu	50.72
Palauea	73.18
Papaanui	0.12
Wahikuli	0.22
Waipao	8.10
Total	1,320.95

Kahikinui District

Location	Acres	
Auwahi	5,280.00	(Ahupua'a)
Luala'ilua	12.32	
Total	5,292.32	

Kaupo District

Location	Acres
Hikiaupea	10.00
Kahawai	2.48
Kalimaowili	2.00
Kualaea	2.37
Kukoae	4.85
Kumunui	164.15
Lole	30.00
Lolei	7.32
Maalo	8.64
Manawanui	13.50

Maniniau	3.56	
Niumaiu	35.06	
Nuanualoa	6.40	
Nu'u	12,140.00	(Ahupua'a)
Papauhauiki	7.20	
Popiwi	10.65	
Pualaea	13.55	
Pukeauhulu	6.37	
Puulani	7.60	
Total	12,475.70	

Source: Office of the Commissioner of Public Lands of the Territory of Hawaii. (1929). Indices of Awards made by the Board of Commissioners to Quite Land Titles in the Hawaiian Islands. Honolulu Territorial Office Building.

Between 1856 and 1865 government lands were auctioned off and many who had not received any land were able to purchase land, if they had enough cash. The following table lists Government land sales (Grants) in Kahikinui between 1856 and 1865.

Table 6. Government Grants in Kahikinui between 1856 and 1865

Grant No.	Grantee	Locality	Area in Acres	Date
1978	Kawahalama	Alena	10.00	1856
2743	Needham, W.G. & Cook, T.	Manawainui	2,394.00	1861
2746	Maluhia	Louluapu	19.96	1861
2794	Kawahinekuewa	Kipapa & Waiapea	96.64	1861
2805	Kailoiloi	Kaohu-iki	24.75	1861
2824	Helekunihi	Kamuku & Kalihi	119.00	1862
2888	Kamakaole	Lualailua	11.00	1862
2901	Kamakaole	Kipapa & Kaohu	75.37	1863
2986	Allen, E.H.	Manawainui	792.75	1865
2988	Kuahine	Lualailua	11.50	1865

(Source: Index of Grants, Territory of Hawai'i, 1916:94)

In the area designated District of Makawao, Honua'ula, there were over 150 government grants. Today, many are still owned by descendants of the families that originally bought the land from the Hawaiian Government.

Territorial Years

Control over the Hawaiian Government Lands and the Crown Lands was taken by the Provisional Government that was established in 1893, when the Hawaiian monarchy was overthrown with the assistance of U.S. military forces. When the Republic of Hawai'i was declared in 1894, these two catagories of lands were combined and collectively called "Public Lands." In 1898, Public Lands that had not been sold by the Republic of Hawai'i were "ceded" to the United State of America at time of Annexation.

In 1900, under the Organic Act, most of these "Ceded Lands" were turned over to the Territory of Hawai'i to administer, however some of the "Ceded Lands" were retained by the United States Government, primarily for use of the U.S. military and Coast Guard. The following table lists the "Ceded Lands" on the Island of Maui in the Districts of Honua'ula and Kahikinui, as reported by the Governor of the Territory of Hawai'i in 1901 to the Secretary of the U. S. Department of Interior:

Table __. List of "Ceded Lands" on the Island of Maui
Districts of Honua'ula and Kahikinui

Ahupua'a	Acres
Honua'ula	
Kanaio	7,600
Papaka	300
Kualapa	400
Kanahena	1,000
Onau	600
Papa'anui	4,500
Kahikinui	25,000

(Source: Report of the Governor of the Territory of Hawai'i, 1901)

The Governor's report described the Honua'ula lands as "Rocky grazing", and the Kahikinui lands as "Grazing land." There had already been one lease (Lease No. 430) on Kanaio that had expired. The District of Kahikinui was under a lease as of Sept. 1, 1900, at the time of the report. Annual rental was $3,010. and the lease was due to expire in February 1906. It is obvious that the Governor's Report is incomplete.

In 1959, the lands that had not been sold by the Territory of Hawai'i, were turned over to the new State of Hawai'i by the U.S. Government, with the exception of those lands that were retained by the U.S. Government, including land occupied by U. S. military, Coast Guard and the U. S. National Parks.

At the turn of the century, Honua'ula was described as being rich with pili -grass, tobacco, cotton, 'ilima, native plants and trees, such as noni and kukui, in the early 1900s (Ashdown 1969-1977).

E.S. Craighill Handy did his field study of southeast Maui in 1934 and described ecological changes due to cattle ranching:

> In Honua'ula (red earth), as in Kaupo and Kahikinui, the forest zone was formerly much lower and rain more abundant before the introduction of cattle. The usual forest zone plants were cultivated in the lower uplands above the inhabited area. Despite two recent lava flows, which erupted in about 1750, the eastern and coastal portions of Honua'ula were thickly populated by Hawaiian planters until recent years. A number of families whose men are employed at 'Ulupalakua Ranch have homes near the ranch house. About these native homes a little dry taro is cultivated.

Ulupalakua Ranch was started in the nineteenth century by Charles McKee. The ranch was originally called Rose Ranch because of the roses Makee had planted on the terraced gardens around his house. Ownership of the ranch passed through many hands and in 1963 was sold to the current owner, C. Pardee Erdman for $3.5 million. Comprising 30,000 acres, the ranch stretches from the sea at Makena up to the 6,500 foot level of Haleakala. The main landing for the ranching operations was at Makena. At Makena there was a small walk and visiting ships used to moor offshore. King Kalakaua went almost every year with a whole entourage and spent two to three weeks. At that time shopping was done in Kihei via horse and buggy or horse and wagon, as there was just a trail before the road was built. The estimated population from Kanahena and Keone'o'io was 10,000 people at the begining of the century.

A reporter with the Hawaiian Gazette who traveled to Kaupo in 1910 wrote the following description of life in the area:

> At Kaupo are to be found Hawaiians living industriously and contentedly, as they do in the few places on the Islands which one has to go off the beaten track to reach. Sweet potatoes are largely grown and they have to take the place of poi, of which there is none here. There are plenty of fish, however, and some of the finest opihis procurable anywhere. There are several grass houses here and the garden of every house is overrun with geraniums, carnations and beautiful roses.A fine new schoolhouse is being built here to

provide for the large number of children in the district. This evening a single party, gaily decorated with leis, is going from house to house serenading.[2]

The reporter also sent his story to the Pacific Commercial Advertiser which ran the report as a series of articles on September 5 and 9, 1910. The September 9 article carried a description of the living conditions of Hawaiians who lived between the new schoolhouse and the Kaupo Gap. It described the traditional houses that the reporter observed along the way, as well as the types of foods cultivated and animals raised by the native Hawaiians of the district. Problems that the native Hawaiians had with marketing the fruit were also identified:

> It is nearly two miles from the schoolhouse to Marciel's house, the trail running past several pohaku houses, grass thatched, and all-grass houses. The occupants raise pigs and sweet potatoes and working a little and resting a great deal, appear to drift in from day to day happily enough.
>
> All take a turn at fishing at times and the toothsome aweoweo is so abundant hereabouts that it helps out the commissary problem materially during the moonlight season.
>
> Excellent oranges and limes are grown at Kaupo, the former being sweet and finely flavored. The Kaupoans could earn many a dollar by shipping their fruit to Honolulu, could they rely on a regular steamer. As it is impossible tell when a steamer is going to call. The steamer Claudine used to call here regularly once a month but the service was discontinued last July, the steamer now going direct from Hana to Hawaii and return.
>
> Several shipments of limes and oranges from here have rotted on the wharf waiting for a steamer to call. The Kaupo people suffer in another way by lack of a regular steamer service. Many of them order their household supplies from Honolulu and are often reduced to famine rations as far as some of the necessities of life are concerned[3].

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[2] Hawaiian Gazette, September 6, 1910, p. 6. and P.C.A. September 5, 1910, p. 6.

[3] P.C.A., September 9, 1910, p. 9.

This account provides some background on the way of life for the Kaupo Hawaiians. The men worked on the ranch but also engaged in subsistence farming and fishing to supplement their wages. In 1922, Manapau and Emory made the following observations about Kaupo:

> Kaupo is indeed a green land and so is Hana. They look so open and pleasant to live in because the wind is always blowing. The coast is good to look at and fine for inshore fishing. The whole of Kaupo faces West Hawaii. Looking upward one sees the majestic Haleakala mountain, the Kaupo Gap and many small waterfalls[4].

In 1934, almost the entire area was ranch land. Hawaiians who lived in Kaupo at that time, worked for the ranch yet still raised sweet potatoes for home consumption[5].

Nu'u was also an ahupua'a of Kaupo. It had a sandy beach and a landing from which cattle were shipped. The ranch also used the landing to transport horse feed. The residents also kept their canoes there for fishing. In 1922, Maunupau and Emory observed five Hawaiian households in the area:

> When we came to level land, that was Nuu proper. It is a seaport and cattle is shipped from here. This was a landing place for fishermen in the olden days and even down to the present. There are about five houses at Nuu and the inhabitants are all Hawaiians[6].

Mrs. Marciel, an informant to Mary Kawena Pukui in the 1960's, was born and raised in Kaupo, near Nu'u. She explained that her family planted sweet potatoes there during the rainy season when the earth was soft. They used the planting enclosures left behind by the ancient Hawaiians. They planted the piko variety which bore potatoes in four, five, or six months, and the mohiki variety which took several months to bear but lasted for several months out of the ground. Her family also

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[4] Kuoko'a, June 1, 1922.

[5] Handy, 1940, p. 113.

[6] Kuoko'a, June 20, 1922, translated by Mary Kawena Pukui, HEN, Newspapers 1922 - 24, Bernice Pauahi Bishop Museum Library.

planted the ipu 'awa'awa (calabash gourds), and pumpkins at Nu'u. The sweet potato, gourd, and pumpkin plants bear well in dry land and flourished at Nu'u. The people of the district also wove hats, using the nanaku sedge as well as the iwa stalk for material[7].

Mrs. Marciel related that the ocean off of Kaupo was famous for sharks...She also explained that when the wiliwili blooms one has to watch out for sharks. The sharks bite. It's mating season. That's the time when the sharks chase the females. When the wiliwili blooms, the sharks become fierce. At Nu'u, the wiliwili is plentiful. (Marciel quoted in McGregor, December 1989:383)

The King's ship used to come to Nu'u to obtain fish. People used to fish for the King in the pond, probably for mullet. The pond had an opening toward the ocean. This opening is now blocked off. There are old Hawaiian petroglyphs, house sites and many unmarked gravesites at Nu'u. Nu'u used to be a big Hawaiian village in ancient times. There were graveyards in the area. When the canoes came in, some wouldn't make it and the fishemen were buried at Nu'u Landing. Respondents gathered opihi and did pole fishing at Nu'u.

There was an active Hawaiian community at Nu'u and Kaupo involved in fishing, making salt, and planting.. Later, some worked on the ranch. The Marciel family once owned Kaupo Ranch and during a great drought, they sold it to the Baldwin Estate. Prior to 1946, there were 5 boat houses and 2 canoe houses at Nu'u. There was a medicine house, right where Kaupo Landing is, in a small hale. Lapa'au (medicinal plants) are everywhere in the area and they were tied in bundles and kept in the building. This was also the salt house. Great Akule schools frequented the bay and the salt was used to dry the Akule. Right against the pali, where the landing and the medicine house was, there was a canoe house that had Hawaiian canoes in it.

People gathered salt at Nu'u. All the stones with small hollows were put on the edge of the pond, then people would put ocean water in them. The sun would evaporate the water, leaving the salt. They used wooden spoons to scoop out small amounts of salt. Nu'u Bay had a nice pond, behind, which is now all overgrown. People used to keep it clean of hau trees. The Navy people used kahili hau for rope on an almost daily basis and this kept the hau in check.

Nu'u Bay has a black stone beach. The Hawaiians used the stones for weighting their nets with palu (bait) . It was a flat weight with two ears, and they tied it and put

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[7] Josephine Marciel, interviewed by Mary Kawena Pukui, May 3, 1960, Kaupo, Maui. Audio-Recording Collection, Anthropology Department, Bishop Museum.#85.7.

the sweet potato peelings inside, covered the bag, rolled and twisted it and laid it in the net. They also used pumpkin, squash, ipu and sweet potato as bait. They would make sour potato mash which looked like a big pudding. They kept the liquid part, fermented it, and drank it as liquor. There was a cave with a water well in front if it. There was also a Hawaiian house there. Beach equipment was stored there.

Photos record that Hawaiians in malo launched canoes in the bay. The fishing houses consisted of Japanese-style skiffs, with miles of net. People that lived there were part of a hui. They fixed nets, made floaters, and made salt. Nu'u, was also famous for Holoholo He'e, which is a very big squid that had short legs and large body. The uhu would come in schools, turning the sea red beyond the bay and everybody would just hook them. As many as 30 people would go out fishing at a time. Somebody would start a fire and make coffee. It was a very gay time. Uhu is a fish that Hawaiians like to eat fresh. It also meant that, even before the fishing was over, they would start loading these fish up on donkeys and trying to get makau and literally just give it away. That's the way they lived. When there was something, everybody shared. There was more use of hukilau nets in those times. In Kaupo, the population was about 480. Afterward, there was a mass evacuation of young people. By 1942, all the young men were drafted. Once they were in the service, they had habits that could not be taken back to Kaupo.

In the 1930s Kahikinui was described as an arid land , scarred by the most recent flow from Haleakala in 1750. The establishment of ranches in the area contributed to the dislocation of Hawaiians from those agriculturally marginal areas. The ranches either bought, leased or adversely possessed the lands in the district for raising their cattle. Then, the running of cattle over the land destroyed the native vegetation and contributed to the erosion of topsoil into the streams and the ocean, seriously undermining the agricultural quality of the land. In 1922, Maunupau and Emory described the district as cattle raising country:

> Many cattle roamed from the plains to the places near the beaches. Here and there were the drinking troughs made for the cattle. The water came here from Kula in pipes. The road we took was winding, going this way and that, up hill and down, sometimes on the edges of the cliffs along the coast with the sea dashing up against the base of the cliff and down into a valley with a stream bed but no water[3].

[3] Kuoko'a, July 6, 1922; translated by Mary Kawena Pukui, HEN, Newspapers 1922 - 24. Bernice Pauahi Bishop Museum Library.

By the time that Handy visited Kahikinui in 1934, it was uninhabited due to the impact of cattle ranching in the district. He noted that, "Now the district is almost wholly ranch land. In the lowlands of Kaupo Hawaiians were still planting sweet potatoes in 1934."

The population of the Hana district in 1930 was 2,436, of which 1,177 people were Hawaiians, accounting for 48% percent of the population. In Kaupo and Kahikinui the total population was 185, of which 160 people were Hawaiian, accounting for a percentage of 86% (US Bureau of the Census, 1930, in McGregor, December 1989: 354).

Population In 1930 [9]

District	Total Population	Amount Hawaiian	Percent Hawaiian
Hana Town	1585	536	34
Kipahulu	147	118	80
Kaupo - Kahikinui	185	160	86

It has long been acknowledged that the United States of America owed a trust responsibility to the people of Hawai'i, since 1898, for having accepted approximately 1.8 million acres of their lands with the understanding that these lands were to be held in trust for the beneficiaries, the people of the Hawaiian Islands, including the Native Hawaiians. Since statehood in 1959, the State of Hawai'i has been the trustee, a responsibility that it took on when the "Ceded Lands" were given to the new State of Hawai'i by the U.S. Government.

In 1920, homesteading for Native Hawaiians was proposed because of the fact that Hawaiians have strong, long-standing legal rights to lands that had been taken from them and "ceded" to the United States of America by the Republic of Hawai'i as an inducement for the United States to annex the Hawaiian Islands. Among the lands selected to be included for the purpose of homesteading by Hawaiians under the Hawaiian Home Lands Act were 22,809 acres in the Kahikinui District.

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[9] U.S. Bureau of the Census, Fifteenth Census of the United States: 1930, Occupation Statistics Hawaii (Washington: Government Printing Office, 1931), p. 72, Table 22. The precincts were identified in the Governor's Proclamations 1926 - 1929, pp. 6 - 21.

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CONTEMPORARY PERIOD: THE SOUTH MAUI DISTRICT, A CULTURAL KIPUKA

Although there have been major changes in population size and composition over the past 50 years in many parts of Maui, change has been relatively slow in certain parts of South Maui (e.g., Hana). Most of the changes have occurred within the last 10 years, especially in the Makawao district (makai and mauka) due to tourism and subdivision development. These changes have accounted for demographic shifts related to a decline in the percentage of Native Hawaiians and an increase in the Caucasion population. The population of the Hana district in 1930 was 2,436, of which 1,177 or 48% were Hawaiians. In Kaupo and Kahikinui the total population was 185, of which 160 or 86% were Hawaiian (U.S. Census Bureau, 1930).

There were 1,895 people (683 in Hana town) and 589 households in the Hana census division in 1990 (U.S. Census Bureau, 1990). The median age of Hana residents was 31.1 years. Between 1980 and 1990, Hana experienced an increase of 33.2% in its resident population. This was less than that experienced in the Makawao district (43%) and less than the county-wide rate of 45%, but much higher than the statewide growth rate of 15% (Office of State Planning, 1992). Residents living within the Hana district were predominantly Hawaiian. In 1990, the Hawaiian population accounted for 47.8% (about the same level as in the 1930); the Caucasian population 38.9%, and the Filipino 4.0% (Table 1). In the Makawao-Mauka census division the Hawaiian population was 8.2%, and in Makawao-Makai the Hawaiian population was 4.9 in 1990 (Table 2). In 1990, Hawaiians in Maui County comprised 13.5% of the population.

The land area in Hana is 467 square kilometers (sq./km.) and the gross population density per sq./km. in 1990 was a low 4.1 persons. The land area in Makawao-mauka is 448 sq./km. and the population density was 12.3 persons per sq./km. The land area in Makawao/makai is 234 sq./km. and the population density was 10.7 persons per sq./km.

Table 1. Resident Population 1980 and 1990, Land Area and Density 1990

Census Tract	1980	1990	Percent Change	Land Area km2	Density sq. km.
Hana 301	1,423	1,895	33.2	467.31	4.1
Makawao Mauka 303.01	3,850	5,525	43.5	448.37	12.3
Makawao Makai 301.02	1,227	2,496	103.4	234.08	10.7

Table 2. Resident Population by Race 1990 (Percent Distribution)

Census Tract	All Races	Whit.	Black	A.Ind	Chin	Filip	Japan	Haw	All Others
Hana 301	100	38.9	0.4	0.8	3.3	4.0	3.4	47.8	1.4
Makawao Mauka 303.01	100	64.7	0.2	0.4	2.8	3.4	18.0	8.2	2.2
Makawao Makai 303.02	100	81.0	0.6	0.5	1.0	5.2	4.9	4.6	2.2

Table 3. Resident Population by Age and Sex by Census Tract 1990

Census Tract	Total years	Under 18 years	18 to 64 years	65 years & over	Males per 100 Females
Hana					
301	1,895	641	1,079	175	111.3
Makawao					
303.01 Mauka	5,525	1,507	3,348	670	100.6
303.02 Makai	2,496	468	1,727	301	104.6

Most of the South Maui District does not have municipal water service. Municipal water service is available in the resort coastal area from Kihei to Makena and in the uplands from Keokea in Kula to 'Ulupalakua Ranch in Honua'ula. Hawaiians at Kanaio, and Kahikinui, use rainwater catchment systems or haul in water and ice from other areas. Kaupo is rich of stream water. Electricity is available in Honua'ula, but serves only some parts of Kanaio. It is not available at Kahikinui. There is only one road across the South Maui District--the Pi'ilani Highway connecting 'Ulupalakua Ranch to Kaupo, all the way to Hana. This road is not considered a viable commuter traffic alternative because it is a combination of A.C. pavement, gravel and unpaved sections and narrows to a single lane in various places (Office of State Planning, 1992). However, the highway is being improved with new concrete bridges across gulches. Hana is served by a small airport and is provided with basic infrastructure.

Major conservation areas include the Haleakala National Park, the Kula, Makawao, Kahikinui, Kipahulu, and Hana Forest Reserves, and the 'Ahiki-Kina'u, La Perouse Bay-Kanaloa Point and Kanaio conservation areas. The rest of the South Maui District is zoned agriculture with ranching as the predominant activity. Major tourist resorts are located in the nearby urban districts of Wailea and Makena, and to a smaller extent in Hana. Hawaiians find work in all the employment sectors in town. Employment opportunities are in the areas of ranching, tourism, commercial fishing, government, and construction. Retirees often supplement fixed incomes by engaging in subsistence fishing, hunting, planting, and gathering activities. Some are homesteading on their own lands.

Ranching has been blamed for many of the districts environmental problems by causing damage to natural resources. In Kahikinui, two ranch owners raised as many as 10,000 cattle and 3,000-5,000 goats for 60 years which have been blamed for

causing damage native plants and trees and to ancient Hawaiian temples and gravesites. Ranching took over land previously owned by Native Hawaiians. Some Hawaiians left the area and did not pay attention when the ranchers took their lands through the process of "quiet title" or "adverse possession."

A number of Hawaiians living in the district are tied to ranching activities. Some have been employed as paniolo (cowboys) on the ranches operating in the area or are children of former ranch employees. As emloyees, they received ranch housing and lived in communities dominated by this sector of the economy. Although large tracts of land belonging to the ranches were off-limits to Hawaiian residents and settlers, a number of Hawaiian families lived around them and gravitated towards employment opportunites provided by the ranches. Seasonal community activities and feasts brought families from various localities; all the way from ranches in Kaupo and Kipahulu to 'Ulupalakua Ranch. People across regions, generations, and lineages had the opportunity to meet and intermingle during the long weekend events in June or July. Activities included a rodeo, nightly feasts, hula dancing, singing and music. Food was brought in and cooked on wood stoves.

Many place names in the South Maui District are associated with mythology, deities (such as Pele), legendary ancestors and ancient navigators, and noted events and kings. Place names describe the geomorphologic character of places, significance, sacredness and mana (spiritual power), subsistence resources available in the area, and habitations and settlement characteristics. Names of temples and other man-made structures reveal their purpose and use, such as cultivation and fishing. Place names are also used to recognize landmarks for orientation and finding off-shore fishing grounds.

HONUA'ULA LAND SECTION

The contour of the land in Honua'ula is characterized by a sloping landscape that extends from the upper reaches of Haleakala to the ocean. At an elevation of 3,000 feet above 'Ulupalakua Ranch toward Pu'u Makua the slope is relatively extreme at greater than 20%. Along the Kula Highway the slope averages between 10-20%, and along the shoreline it levels off to about 10%. There are no perennial streams in Honua'ula. The vegetation cover is characterized by shrub rangeland makai of the Kula Highway and by crop and pasture-land mauka of the Kula Highway from Kula to 'Ulupalakua. The 'Ulupalakua Ranch is surrounded by evergreen forests with pockets of crops and orchards, pastures, and nurseries makai of the Highway. Cape Kina'u is characterized by baren rocks. An evergreen forest is located between Keone'o'io and Pu'u Naio. The area mauka and makai of the Pi'ilani Highway from 'Ulupalakua Ranch to Kanaio is largely shrub rangeland. Baren rocks characterize the areas around Cape Hanamanioa and between Pohakueaea and Pu'u Pimoe. Herbaceous rangeland and shrub and mixed rangeland

Text Missing

The state land use boundary review identifies the Pu'u o Kali area as one of the best examples of lowland dry vegetation in Maui and recommends that it be zoned conservation rather than agriculture. The rest of Honua'ula is zoned agriculture with the exception of the coastal urban districts of Kihei, Kamaole, Wailea and Makena: and the conservation district encompassing the 1790 lava flow from Pu'u Maho'e to Cape Hanamanioa, and the lava flow from Pu'u Pimoe to Kalulu in Kanaio (Office of State Planning, 1992).

<u>'Ahihi-Kina'u and Kanaio Natural Area Reserves (NAR)</u>

The 'Ahihi-Kina'u Natural Area Reserve encompasses 2,052 acres in Honua'ula, Makawao. It runs from 'Ahihi Bay to La Perouse Bay and includes all Cape Kina'u and is intersected by the Makena Keone'o'io Government Road. Part 1 of the Reserve includes portions of the Government Land of Onau, Kanahena, Kualapa and Kalihi and encompasses a gross area of 1245.50 acres. Part 2 of the Reserve includes submerged lands fronting Moomuku, Onau, Kanahena, Kualapa and Kalihi containing an area of 807.40 acres (Department of Accounting and General Services, 1973).

The Natural Area Reserve includes the following significant coastal reserve sub-areas (Maciolek, 1973):

1. <u>Marine Reserve</u>. Pristine and representative shallow water ecosystem with dense and diverse bottom community, particularly the stony corals and the slate pencil urchins. Because of the many water rock contacts, inter-tidal fauna is rich. The protected inshore system of the bay and cape with their diversity of flora and fauna can act as a gene pool reserve in which reproduction and development can occur .

2. <u>Lava Flow Reserve</u>. Cape Kina'u represents the last incident of active volcanism on Maui, formed around 1790. It contains native vegetation in kipuka (open areas surrounded by lava) such as Hawaiian caper, Naio, Wiliwili, Nehe, Pili grass.

3. <u>Tidepool and Pond Reserve</u>. Irregular Porous lava provides another class of aquatic ecosystems intermediate between open seashore and freshwater. Biota in these systems varies with the degree of salinity. Near-shore ponds are marine-like, showing algae, invertebrates and fishes. Progressing inland, fewer and more unusual species are present. Fishes and marine algae disappear and two species of crustaceans, the endemic small red shrimp or 'Opae'ula (Halocaridina Rubla) and an alphaeid shrimp (Metabetaeus lohena), known only from three other localities in the Pacific, appears. Many ponds contain the bleu, a green alga Microcoleus vaginatus and the aquatic

phanerogam, Ruppia maritima. The Cape Kina'u ponds represent the only extensive habitat for this uncommon species on Maui. Water birds such as the Ae'o (Hawaiian stilt), sanderlings, curlews, plovers, turnstone and migratory ducks have been observed in the larger open ponds.

Forty-two acres of La Perouse Bay/'Ahiki-Kina'u Natural Area Reserve are proposed to be rezoned from agriculture to conservation to be consistent with the NARs designation. The proposed transmission line will cut through the northern side of the 'Ahihi-Kina'u Natural Area Reserve at Kanahena on government lands and will be within close proximity of several government grants on the northern side of the transmission line (Office of State Planning, 1992).

The Kanaio Natural Area Reserve includes 876 acres of land in Kanaio and Makawao, on both sides of the Pi'ilani Highway. The mauka section, or Parcel A, includes 595 acres and the makai section, or Parcel B, includes 281 acres. It contains a 50-foot road right-of-way in favor of the State of Hawai'i located on the mauka side of the Pi'ilani Highway. This area is designated a reserve because it contains many rare and endangered native plants. It is also in the state conservation district. The proposed transmission line will cut through the Kanaio Natural Area Reserve running along the makai side of the Pi'ilani Highway.

Natural Area Reserves are unique areas that are designed to be protected from encroachment, alteration, and development. They are under the control and management of the State of Hawai'i, Department of Land and Natural Resources. Permitted activities are restricted to hiking, nature study, bedroll camping without tent, and hunting of game mammals and birds subject to hunting rules. Prohibited activities are those that affect plant and animal life; the introduction of plant and animal life; actions that impact any geological, paleontological feature, or substance; any historic or prehistoric remain, and those activities that damage existing notice, markers or structure. Special-use permits may be issued to conduct activities, otherwise prohibited for research, education, management, or for any other purpose consistent with Chapter 195, Hawai'i Revised Statutes (Department of Land and Natural Resources, 1981).

Homesteading on the King's Grants in Kanaio

Some Hawaiians in the area descended from families to whom land grants were awarded by the King during the Great Mahele of 1848, and the Kuleana Act of 1850. These lands remained in the hands of families for generations. Twelve families live in Kanaio and have plans for building additional houses for their children and grandchildren. There are about 20 properties in Kanaio and some parcels are at a higher risk of being impacted than others.

One family reported that they have a genealogical connection to the land dating back 225 years. Members of this family were born and raised in Kanaio. This family owns 4 land parcels, one of which is about 85 acres along the right-of-way of the geothermal transmission lines in Kanaio. Thirty people are involved in the joint-ownership of this parcel. These owners live in Hawai'i and on the American continent. The same families have 2 additional parcels of 100 acres and 37 acres in Kanaio, and a 50 acre parcel along the road within close proximity to the proposed transmission line corridor in Kahikinui. Their family burial grounds may be impacted by the line. In addition to building homes, they have sought to improve infrastructures in affordable and appropriate ways first by using a generator and building a water tank.

Given the difficult economic times, Hawaiian extended families were coming back to settle in Kanaio because of the affordable land and genealogical ties. One informant reported:

> Our ancestors came from here over 100 years ago. So we are here, because of that tie. We live the land--we plant, we hunt, and if we can make it down to the beach, we fish. I'm trying to pave a path for my children to come here and homestead this land. That's the reason I'm here.

In order to stay in the remote area of Kanaio, some individuals were commuting one to two hours, five days a week, to reach their place of employment. Their reward was, in their words, to return home to a serene, peaceful, and quiet place where they could enjoy nature and live off the land.

KAHIKINUI LAND SECTION

Kahikinui is 7 miles long and 6 miles wide and ranges in elevation from sea level to 10,000 feet. Its slope at the 3,000 foot level in the forest reserve was greater than 20%, and between 10% to 20% closer to the shoreline. The land section contains several Pu'u (cinder cones created through volcanic action in ancient times). The main cones in Kahikinui are the Luala'ilua Hills. Through the district are large gulches and gullies that reflect years of soil erosion from water runoff; although there are no perennial streams. Recent lava flows are also visible.

The average temperatures can range from 82 degrees Fahrenheit near the shoreline to 62 degrees in the higher mauka regions. The average annual rainfall in the shoreline area is 10-15 inches and 20-30 inches in the mountains regions. This range in temperature and rainfall and the configuration of recent lava flows has resulted in different sets of vegetation. Although the most prevalent vegetation is grass, there are also foreign bushes and trees as well as many native species. Rare

and endangered native plants are located all around Luala'ilua Hills, in the area between Kepuni and Kamole gulches, and in Manawainui Gulch. Some informants believed there was a high probability of finding additional rare and endangered plants in the area. Animal life at Kahikinui consists mainly of cattle and feral goats and pigs. Much of the soil erosion and lack of vegetation is due to their destructive over-grazing. Goat eradication efforts and open hunting seasons have not been successful in significantly reducing the number of goats in the area.

The Kahikinui district mauka and makai of the Pi'ilani Highway is characterized by shrub and brush rangeland. The Luala'ilua Hills are covered by herbaceous rangeland. Mixed rangeland pockets are below the Kahikinui House toward the sea. The upper slopes of Kahikinui have herbaceous rangeland and evergreen forest land around Pu'u 'Ouli, Pu'u Pane, at Manawainui and Wai'opai. Mixed rangeland is found towards the summit at Pu'u Ula'ula (10,000 feet) and in the upper slopes from Kahalulu Gulch to Kaupo. The Kaupo Gap is covered by shrub rangeland. Along the coast from Naka'aha to Manawainui and Wai'opai are mixed rangelands and herbaceous rangeland areas (U.S. Geological Survey, 1976-78). The entire Kahikinui land section is zoned agriculture by the state with the exception of the shoreline that falls in the conservation district (Office of State Planning, 1992).

The shoreline at Kahikinui is often considered a pristine area that has not been abused by commercial fishermen or tourists. Many believe that this area should be reserved for Native Hawaiian subsistence use only. While the area remains very productive for fishing, informants reported that over the years the fish supply has declined because more fishermen are willing to endure the hardships of getting there. The area is therefore in need of proper management and informants suggested that it should be reserved for subsistence use only.

In Kahikinui, there is an abundance of cultural resources. There are many archaeological sites at Kahikinui that are relatively intact and undisturbed because of the dry leeward climate and relatively limited development. While there is no comprehensive archaeological survey or detailed inventory of the area, there are many references in the general literature to historic sites in the area. Nine sites are on the Hawai'i Register of Historic Places including: Alena Habitation Site, Luala'ilua Huia, Kaluakakalioa Cave, Luala'ilua Cave, Papakea Petroglyphs, Hanamau'u-loa Complex, Kipapa Archaeological District, Luala'ilua Terrace Complex, and the Kahikinui House site. A total of 16 heiau are currently documented on the State Historic Site Inventory. Eight of the 16 heiau are located along or near the coast to about the 600-foot elevation level. Four of the mauka heiau are within the Kipapa Archaeological District, which is a huge district ranging from sea level to the 2,600-foot elevation level and contains approximately 712 features. The remaining 4 heiau are between 1,400 and 2,250 feet in elevation. It is highly probable that other heiau are present within the area.

Village complexes are also present. Records indicate the presence of village sites along the coast at Hanamau'u-loa, Wailapa, Ka Lae o Ka Pulo'u, and Kamoamoa. Historic sites maps also refer to the place names of Wai-a-'ilio, Waiapea, Nakaohu, Kalaniana, and Uliuli. The Hoapiii Trail can be seen throughout the coastal area. This trail is an historic horse trail constructed between 1824 and 1840. Much of it is constructed on top of earlier trails such as the Kiha-Pi'ilani Trail that once encircled the entire island of Maui. The wealth of historic sites at Kahikinui is said to give mana (spiritual power) to native Hawaiian beneficiaries who are committed to malama (care for) these sites and revive the wahi pana and practice their cultural and religious beliefs (Ka 'Ohana O Kahikinui, 1993).

The villages date back to the time of Pi'ilani in the 1500s. The Kahikinui villages were quite numerous and indicated an extensive population. Walker (1931) estimated a population of 1500 or 1800 based on a count of sites in the south coast of Kahikinui. Burial platforms of rough stone are common features of the villages along the Kahikinui shore.

Informants considered Kahikinui a sanctuary or healing place where Hawaiians and others could find inspiration and achieve well-being as alternative to the alienation or displacement they experienced in other settings. One informant stated:

> Kahikinui will be an impetus--a reason to do things. There are so many people who are so lost because they don't have anything to do but watch the tube, drink beer, get into drugs and have nothing. But there are many young people who are looking for something to identify with. When you can direct them to elements that they can relate to, they jump into it and forget all the other abusive things to their health. We should be able to bring as many as they want to come down. There's no closed doors to any nationality. It's an open door for those who want to learn.

Homesteading on Department of Hawaiian Home Lands

Many Hawaiians have been waiting for years to obtain pastoral and homestead leases from the Department of Hawaiian Home Lands (DHHL). One informant reported that there were 2,443 Hawaiians on the waiting for Maui. Some of them organized a group named Ka 'Ohana O Kahikinui which has proposed community-based land use plans for Kahikinui, initiated management practices on the land, and members have already settled on the land. DHHL owns 20,890 acres in Kahikinui and for 73 years, Hawaiians were not allowed to live there because the land was leased out for ranching to non-Hawaiians in order to generate revenues. Since 1992 members of the Ka 'Ohana O Kahikinui have occupied the land while

waiting for their leases. In October, 1993 DHHL awarded 2,500 acres of pastoral and homestead lots to those on the waiting list. About 100 families would be at Kahikinui with DHHL leases.

Place Names at Kahikinui

Informants reported historical ties between Kahikinui (which translates into Great Tahiti) and the islands of Tahiti. Some believed there were navigatinal ties between the two places and that they had ancestral ties to Tahiti. Other place names in Kahikinui include: Manawainui (The big water/river) for a big gulch where a lot of water is generated there during heavy rain; Kanaloa for a place where Kanaloa may have landed; Manamana which refers to spiritual powers; and Mahamenui which refers to Mahame trees, a hard wood, and probably prolific through the area at one time. Informants believed that many sites along Kahikinui were given names that referred to Hawai'iloa, an ancient navigator. These included fishing ko'a, and astronomical and navigational sites on the mountain. Some of these sites connect to the mountains on west Maui.

Another informant mentioned the important relationship between Kaho'olawe and Kahikinui. In the legends of the famous Gods Kane and Kanaloa, the story unfolds that when they left Kaho'olawe they went straight to Kahikinui. The gods Kane and Kanaloa then circled the island of Maui, making springs of fresh water all around the island. This informant believed Kahikinui should not be disturbed because it was where the Gods began their work.

Wahi pana (noted, celebrated places), the pristine conditions for star observation, omens, and accessibility make Kahikinui an important place for Hawaiians and their future generations. There are many chants referring to Kahikinui and it is reported that Hawai'iloa, the navigator that first contacted the Hawaiian islands, named this land after himself. One informant shared:

> Because of the stars Kahikinui, and the navigation--there's a real important connection. If we sit up high at Hale'akala and look at Keali Kahiki, all through here, it would connect to that other heiau on the Big Island at Kohala. Very important...so the people who came and looked at this place must've thought it to be a major, major place, to give it such a significant name.
>
> And Kahikinui is the "Great Tahiti". This is the land of Kanehekili, land of the Rolling Thunder. So when dark cloud comes, a curtain of rain, a sheet of rain that walks down the land, and you ask something that morning, you're getting your answer very forcefully. The reading of the setting sun is also made at the Kahikinui heiau. On South Maui

along the coast. we have more family canoe names and names of navigators than any other place is Hawai'i. Nahiku is the 7 stars that make the Big Dipper. Popukele. which means Commander Navigator. is the name of the heiau in Kahikinui to learn about the stars and navigation. The Old Catholic Church site of St. Inez. We call that place Onoinu. the healing drink. Kaolainu is new life fluid. Because the complex is not where Pi'ilani Hale is. It starts there and goes all the way down the beach. They talk about landing hundreds of people there in a really rough coast.

The importance of Kahikinui is reinforced in the Conceptual Community Land Use Plan formulated by the Ka 'Ohana O Kahikinui. The area was perceived as important because of its legendary past and because of the recent resettlement efforts there. A major reason why some Hawaiians were coming back to Kahikinui and applying for DHHL leases was because their families came from the area. One informant seeking resettlement said:

> In just 100 years. they'll look back to this particular group as being a point of reference in time as to when the land was used by Native Hawaiians. In the future, they'll look back to this time and we'll have chants about this time.

KAUPO LAND SECTION

The slope of the land is Kaupo is less than 10% from the shoreline to the 1,000 feet elevation, and then it becomes very steep in the forest reserve area approaching Haleakala. There are several perennial streams in Kaupo. Shrublands are common in Nu'u at the Kaupo gap. Near the shore are evergreen forests, baren rocks, and mixed rangeland. Shrubland and mixed rangeland is found along the coast towards Puka'auhuhu. The evergreen forest area is mauka of the road at Naholoku and baren rocks are above the Manawainui stream. Around the village of Kaupo there is crop and pastureland; and near the shore evergreen forest and mixed rangeland. The entire Kipahulu Valley is covered by an evergreen forest from mauka to makai (U.S. Geological Survey, 1976-78).

The Kaupo land section is zoned agriculture with the exception of the conservation district mauka in the forest area, and at Kepio. A conservation district is proposed by the State of Hawai'i for 795 acres at Kaapahu above the Kaupo homesteads to protect the best examples of koa and ohia forest on Maui outside of Kipahulu Valley (Office of State Planning, 1992). The areas closest to the geothermal project are Pahonu, Kolo, and Nu'u. Informants presented a vivid picture of the place and of their living experiences in Kaupo indicating the continuity of Hawaiian lifestyle into this century.

Nu'u is noted for its landing place, its fishing, the fishpond, the direction of its currents, the ancient canoe village, and the ancient burials. The King's ship used to come to Nu'u to obtain fish. People fished for the King in the pond, probably for mullet. The pond had an opening toward the ocean which is now blocked off. The current took boats out to the open ocean. There are house sites and many unmarked gravesites at Nu'u which used to be a big Hawaiian village in ancient times. The graveyards at Nu'u Landing were for the dead at sea. The ranch used the landing to transport horse feed. Informants reported that they gathered opihi and pole fished at Nu'u.

The name Kaupo means "landing at night." The name confirms that Nu'u was a safe harbor and used by canoes in ancient times. Boaters use the area to this day. Nu'u, the place, is belived to be the oldest landing of Nu'u, the navigator. There was a small but active Hawaiian community of fifteen families at Nu'u involved in fishing, making salt, planting, and later on working on the ranch. The Marciel family once owned Kaupo Ranch and in a great drought, it sold it to the Baldwin Estate. It is for sale again.

Prior to 1946, there were 5 boat houses and 2 canoe houses at Nu'u, and seventy stone boats along the pond at Nu'u. There was a medicine house at Kaupo Landing. Lapa'au (medicinal plants) were everywhere in the area and they were tied-up in bundles in the house. This house was also the salt house. People gathered salt out of the pools. It was used to dry akule when great schools of this fish frequented the bay. All the stones with a basin were put on the edge of the pond and water was put in them. The sun would evaporate the water and leave the salt. Hawaiians used wooden spoons to scoop out small amounts of salt. Nu'u Bay had a nice, well-kept pond which is now overgrown. People used to keep it clean of Hau (lowland tree). Hawaiians used the area to fix nets and dry akule and moi. When the moon was up, men would practice their aim using their slings to hit mongoose and rats.

The once famous petroglyphs at Nu'u are gone. There is a shelter cave with a roof that has collapsed. One informant said there were still nets inside the cave when he was a child. His uncle took the stones from there to make poi pounders. Nu'u stones were used for making the palu (bait) weights which was part of a method used by people from Nu'u. The weights had two "ears" and were tied together with sweet potato peelings and a bag cover. Fishermen also used pumpkin, squash, ipu and sweet potato.

Hawaiians wearing malo launched canoes in the bay. The fishing houses consisted of Japanese-style skiffs with miles of net. People that lived there, fixed nets, and made floaters and salt. Nu'u was famous for holoholo he'e, which is a very big squid with short legs and large body. The uhu (parrot fish) were so abundant they would turn the sea red beyond the bay. Uhu came in schools and as many as

30 people would gather and hook them. It was a very festive time. Somebody would start a fire and make coffee. Uhu is a fish that Hawaiians love to eat fresh. After the fishing was over, people would load the fish on donkeys to go mauka and give them away. When a resource was available it was shared.

One informant reported when he was a child, Kaupo had grass houses. The houses were made of strong stone walls so horses wouldn't eat them. They were also built with lanais (porches). In Kaupo, the population was about 480 before 1938 when the road came in. Afterward, there was a mass evacuation of young people. By 1942, all the young men were drafted into the service and many of them never returned to the area.

Continuity of Hawaiian Cultural Practices In South Maui

The continuity of Hawaiian cultural practices is not restricted to subsistence activities. Strong ancestral connections to a place is expressed by rituals surrounding the birth and death of a relative. Traditional rituals in the area include the hiding of the newborn piko (umbilical cord). For example, stones where the piko were hidden could be found at the upper road in Kanaio and in caves in Makena. Death rituals consist of tending the burial grounds of ancestors and burying family members on ancestral lands.

Ancestors are buried in hidden caves (at Kahikinui), rock walls (at Kanaio), as individual burials (at Makena), small family burials (at Kanaio), and cemeteries (at Kanaio). Some of these burials are tended to by family members who maintain the grounds and decorate them. Informants indicated that a given family would use several caves which were accessible and within close proximity to their residence. The ana (caves) are still used as family burials, but some have been desecrated by outsiders. There was an expressed need to protect burial caves and deny access to trespassers.

Both rituals, the piko stones and family burials, serve to cultivate a strong sense of kinship or relationship to the places and the districts where Hawaiians lived.

Informants were not only concerned about the the protection of existing caves, but in their ability to access these areas in the future. One family had all of their immediate ancestors (e.g., grandparents) buried in Kahikinui at 3 different sites, including a cave with a canoe burial. The government had recognized the fact that they had a genealogical connection to the area, and after 80 years of waiting, they obtained from DHHL the key to the gates leading to their family burials. Family members visit the burials periodically to tend the grounds.

The burial is known to the Burial Council, and the family needs assistance for its protection and upkeep. Other informants reported searching for and finding their ancestral burial grounds, maintaining them, and were seeking to protect them. They recognized that the land they owned was a gift of the previous generation and that they intended to perpetuate the values of their ancestors through their upkeep of the land. Informants shared the following quotes:

> Took me quite a while to find out where my grandmother and granfather were buried. I never did see them. I cleaned their burial place when I found them. It is now clean. I cared. That is why I have what I have--because of them.

> We have a family plot there. My great grandfather and grandmother are buried there. It's always nice to leave [the land] it the way it was years ago. You can see, right now, we are looking [to the land] through our great-grandparents' eyes and what it was years ago, and it's still here.

The desecration of caves was the result of outsiders who coming in and lighting candles, manipulating bones by scattering remains on the floor, and destroying coffins. Some informants speculated that the culprits were new age cult people living in the area. Their trespassing on the burial caves was seen as a serious offense, although some informants believed that the trespassers were also there to sleep, meet, hide, or avoid the hot sun.

Some families have the right to enter certain caves, while others can only sit outside to pray and call for answers. One long cave in Kanaio goes directly under the highway and will be on the path of the transmission poles. If the cave were to collapse, it would be considered an offensive act against Hawaiian spirituality because the cave was considered holy.

Transmission of Native Hawaiian Culture in South Maui

Learning Hawaiian ways occurred when parents took their children to places where they could engage in subsistence activities and absorb Hawaiian values. Some kupuna believed that the inspirational nature of sites such as wahi pana (noted, celebrated places) facilitated the transmission of culture from grandparents and parents to children.

Kupuna also expressed a need to pass on the culture to young adults by teaching basic Hawaiian values such as laulima (working together); to not fight and work things out; to recognize traditional ahupua'a boundaries and ask permission to go to another ahupua'a. One informant shared:

I come here [in Kanaio] because this is my land, these are my boundaries, and we all help each others if we do not have enough. We work together but we keep our boundaries. If you are from there and you want to come here hunting you came and see me. They ask me, "can I fish here?" They will never take it upon themselves to go in there, they knows the rules. If somebody is already there you must respect what he says and go some place else. That is how we were taught. The newcomers do not know this and it is a problem. They broke all the rules. They do not understand so that is where all the problems come from.

Another strongly held Hawaiian value mentioned by informants was taking only what was needed for the family. Hawaiians must malama (taking care of) the area and not overtax its resources. One informant stated:

That's one thing I learned. You only take what you need and put the rest back. Yes, that's what we all do, we manage our own areas. Upkeep things. If we go hunting we only take one or two--take what we need. Because if you take all, then next time you go, you won't have any.

There was a belief held by some that sovereignty was retained by transmitting Hawaiian cultural values to successive generations and by settling Hawaiians on the land. One informant asserted:

What I am doing is not for me it is for my kids and grandkids. Later on when they are older everything will be set up already. That is why I do things.

Other informants who lived in town recognized the value of having young children experience the pristine environment of Kahikinui and engage in Hawaiian practices. Children from urban areas were accustomed to video games and TV and did not have exposure to nature. At Kahikinui, a father could take his children to places where his own father took him, and repeat the experiences of walking the ancient places and gathering 'opihi, pipipi, and fish, while speaking the native language. One informant explained:

Everything that it is valuable to share with my son is still here. Its so important Kahikinui the way it is, because the resources are here. Kahikinui is about the last place that we can really go and do this. And we can be part of what was before. But we need to have the space to do it. For me, its a great thrill, and I think we can do that for all of our keikis (children). By providing a place where they can just come and feel comfortable with the malo. Because that's the greatest

struggle for our keiki o ka aina (children of the land)--to be able to really feel how it used to be. We used to come as several families. uncles and aunts and children for a couple of days. We always looked forward to it. The nuances. that's what I was trying to share with my son and daughter. on how to read the signs of the ho'ailona.

Frequency of Contact with the Project Area

Informants who did not live in the area frequently visited various places in South Maui. Types of contacts included visiting several days a week while passing through the area; weekend outings and/or camping as many as five or forty times a year (as reported by informants). Subsistence users visited the area when they sought more resources. This occurred when: there was a baby luau or some other feast; or when supplies were running low. One type of arrangement was to share a house with many people or families and go there on weekends.

Only a few families are permanent residents of Kanaio. Those that are use the area for fishing and hunting on a sustained basis. Some families on the DHHL waiting list came to Kahikinui on a regular basis. Generally the father hunts or fishes and the others work on the land and plant. The children become familiar with the land and visit ancestral or cultural sites. Coming back to the ancestral lands may be prompted by dreams or encouraged by the parents and kupuna.

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SURVEY METHODS FOR SOUTH MAUI

The investigators originally planned to conduct approximately 20 in-depth interviews and 3 focus group discussions of informants representing South Maui. As was the case with Puna, the number of in-depth interviews exceeded what was planned and the number of focus groups was slightly less.

Informants for the South Maui portion of the HGP survey were selected from a list of individuals and/or 'ohana who were known to be associated with the project area. In this case, the proposed geothermal transmission line was projected to run from the East portion of Honua'uli, across Kahikinui, and into the Western portion of the district of Kaupo. The list of Native Hawaiian informants was compiled to reflect either residents or those who had genealogical ties to these areas. The investigators received assistance from state (e.g., State Historic Preservation Office) and county agency representatives (e.g., Planning Department) and Native Hawaiians residents of Maui. A site coordinator, who had genealogical ties to South Maui, assisted the investigators in making contacts with prospective informants and conducting site visitations.

Thirty-nine informants were contacted and 26 of them were interviewed. Sixteen participated in in-depth interviews (2-3 hours); and 10 informants participated in interviews that were less than 1 hour. All interviews were conducted at either the informant's place of residence or at the location where cultural or subsistence activities were undertaken. The informants represented the following districts within South Maui: Kahikinui, Kanaio, Makena, Ulupalakua, Kaupo, and Nu'u.

Similar to the Puna survey, a packet of information related to the HGP design was presented to informants in both the in-depth and focus group interviews. The intent of this exercise was to assess informants' opinions regarding impacts after they had a clearer understanding of what the project entailed. Informants were also presented a map and asked to identify sites related to subsistence and Hawaiian culture.

The same set of interview questions were used at both Puna and South Maui. Informants were asked about their ties to the areas of South Maui, natural resources, religion, subsistence and cultural practices, HGP impacts, and mitigation measures.

Two focus group discussions of 4-5 hours were conducted with the organizations Ka 'Ohana O Kahikinui and Kanaio 'Ohana[1].

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[1]The Ka 'Ohana o Kahikinui focus group was held on 1-7-94 at St. Ynez Church. The group was comprised of Native Hawaiian beneficiaries who were on the Department of Hawaiian Homelands waiting list for pastoral and/or homestead leases. About 10 members participated in the discussion. The Kanaio 'Ohana focus group was held on 2-26-94 at the Kanaio homestead. This group was

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NATIVE HAWAIIANS ETHNOGRAPHIC SURVEY

HAWAII GEOTHERMAL PROJECT – EIS

CANDO 1994

Minerbi-Kelly
University of Hawaii, Manoa
Honolulu, HI 96822

PAPAANUI
MAKENA
KANAHENA
KALAPA
AHIKI-KINAU
KANAIO
KAUNAUHANE
AUWAHI
LUALAILUA
NAKAAHA
MAHAMENUI
KAUPO
NUU
NAHOLOKU

PROPOSED CORRIDOR

Subsistence Practices & Cultural Resources

- Fishing and Ocean Gathering
- Hunting and Livestock raising
- Plant Gathering
- Trails and Boat/ Canoe Landing
- Archaeological and Cultural Sites to Protect
- Areas to Protect from Over Harvesting and Over Development
- Native Hawaiian Plants

Mapping by Subsistence Practitioners

Scale
0 1 2 3 kilometers
0 5000 10000 15000 feet

(INSERT MAP 2 ABOUT HERE)

Map of South Maui

The map of South Maui indicates the various use areas and cultural and historic sites (Map 2). This information was derived from informants during interivews. As indicated on the map, fishing and ocean gathering occurred along the entire coastline. Hunting and plant gathering occurred primarily in the mauka regions. Native Hawaiian plants, many of which were endangered, were found along the coastline or in the mauka areas. Many of them could be found within close proximity to the highway. Archaeological and cultural sites were concentrated along the coastal areas and in ancient settlements along the slopes of Haleakala. The trails that were identified generally extended from mauka to makai or ran along the coastline to accommodate fishermen. Informants identified a number of significant areas, that for various reasons, warranted protection from over-harvesting or development.

Deities, 'Aumakua, and Ho'ailona

Informants who acknowledged having 'aumakua referred to their beliefs as a private family matter. For the informants from South Maui, the 'aumakua was represented in marine life such as great fish, mano (shark), puhi (moray eel), mo'o (lizard), honu (turtle), and land animals such as pueo (owl). Many of them looked for appearances by their 'aumakua. For example, one informant shared that at a family funeral, his 'aumakua, the pueo, appeared to lend support to his family. The family knew where their 'aumakua could be found and always made efforts to nurture or never harm them. For example, mano caught accidentally in a net was released. Some informants said that they looked for ho'ailona (omens). Particular natural phenomenon like clouds, thunder, rainbows, and the sighting of rare birds were interpreted as ho'ailona. Rainbows were believed to be the herald of the porthole to other life dimensions and the clouds at night were believed to be the active, inner force of the god Hina. The appearance of ho'ailona was interpreted as an omen that some event was forthcoming. One informant shared information a ho'ailona, the manoeva bird:

> This black birds--it looks like an eagle. It flies here sometimes and you very seldom see it. It flies so high, a big black bird. My father used to say that whenever that bird comes, good things happen. Last year I saw him.

The Goddess Pele

Pele was represented in South Maui by various symbols. For example, in Kanaio, the commonly found maidenhair represented Pele's hair. Some informants believed that the presence of Pele as indicated by these symbols, would serve to protect them from projects that were harmful to the 'aina. Pele had a way of taking care of things or cleansing the landscape when it was being used inappropriately. Geothermal development showed disrespect which would incur the wrath of Pele. Her wrath might be displayed in the form of volcanic eruptions or movements deep within the earth that would damage geothermal facilities. One informant

believed that teaching hula was one way he was able to pay homage to Pele. The chants and movements involved in hula were intended to honor her spirit. Another informant believed that Pele took care of those who respected her and loathed those who did not. Geothermal was considered a sacriledge and perpetrators would be punished. One informant shared:

> When you are tapping geothermal, you are playing with our Goddess Pele which in my eye is not good. Spiritually, and being Hawaiian, you are playing with one of our goddesses which is not right. Leave Pele alone! Leave the geothermal alone and leave Kahikinui to people coming back on the land.

Some of those who beliefed in Pele identified with Hawaiians in Puna who were committed to safeguarding her from geothermal development over there. One informant who held strong Christian beliefs was not opposed to HGP on the basis of spirituality but respected those who were. He stated:

> Well I go to church. I have one God. So I don't believe in Pele. Maybe Hawaiians believe in her. Its okay. Geothermal is going into the earth, to me its just a volcano. People have their beliefs. I just respect what their beliefs are and I don't understand it. All I know is its traditional, that Pele is believed to have certain powers to do certain things. Some may be coincidental, some of it may not.

Religious Practices

Persons intending to resettle the area of Kahikinui have begun reinstituting ancient cultural and religious practices. The investigators witnessed the opening of Makahiki by a group of Hawaiians (Ka 'Ohana O Kahikinui) in November, 1993 and its closing in February, 1994. Participants believed that this ceremony may have been the first of its kind in about 127 years. The ceremonies involved food offerings, hula, and the launching of a small canoe which contained a food offering. The canoe represented the ka waa o Lono (the canoe of the god Lono) which was being sent back to Tahiti (Malo, 1951).

The group had elaborate plans to conduct more religious and cultural activities at Kahikinui because of its sacredness and historic significance and it remained one of the last untouched areas on Maui. Place names at Kahikinui represented links to ancient navigators including Hawai'iloa (discoverer of the Hawaiian islands), Anianikalani (his father), and Hualalai (mother of Hawai'iloa and Nu'u, another noted navigator). Halau hula were known to travel to this area to enact chants and dances honoring Hawai'iloa and the others. One kumu hula (hula master) discussed the importance of this place and future plans to rebuild their culture:

> So Kahikinui has gone beyond my anchoring of being raised in this area, because now it takes me beyond to mythology of Hawai'iloa. In the near future, probably summer, we would pass Pohaku (rock) from one person to another, like ancient

times, to build a structure. So that, just the touching of the Pohaku to document in their minds, their 'ohana, that they were part of rebuilding a prolific element of Hawaiian culture. Because of the geographical location and the name places, it would be great to facilitate the Makahiki with and opening and closing ceremony. Any kind of ceremony for me is an offering to the gods, offering to participants, giving land and ocean. When you open, there were different activities, food offerings were alwlays very important. Its part of this land, almost everything that was there. I anticipate this land to become more fruitful and abundant. And we need more people out here to work this land, so they can receive the reward aesthetically, or physically or whatever. Its willing to give back, if we are willing to come and give.

Kahikinui was described by some as "away but not away." This meant that it was usually within a hours reach from home and a place that provided a spiritual uplift for those who wanted a dose of nature and culture. For many informants, subsistence activities were considered ways to gain spiritual rejuvenation and a religious right.

Natural Resources

It has been said that at one time, the forestline extended all the way down to the ocean. The different elevations had different types of trees. The vast watershed system created by the forest provided Hawaiians with a supply of freshwater. In the last 100 years the forest in the lower elevations (to the 5,000 feet level) has been largely destroyed. The loss of the trees and watershed has greatly diminished the land's ability to hold water. Thus, the area has become dry.

The mountain and forest as a whole were perceived by some informants as being a natural resource. The natural elements operated in concert to provide the resources required for the sustenance of endemic organisms, including humans. The daily occurrence of long cloud formations and moisture at mid-elevation on the slopes of Haleakala ensured the permanence and expansion of the forest and rare endemic plants. For many, revegetation with native forest and plants was critical to the establishment of a watershed system that would ultimately allow for the resettlement of Hawaiians.

The availability of freshwater was essential to repopulating the area and to subsistence and cultural activities. Some informants discussed ways they had adapted to the chronic water shortage in order to maintain an activity or livelihood. In the arid region of lower Kahikinui, for example, fishermen have learned to find fresh drinking water by reading natural signs along the shoreline. The appearance of opae ula or minute red shrimp in the tidal areas or on certain seaweeds indicated the presence of freshwater. After heavy rains, fishermen were also aware of places where they could dig wells by hand. One fisherman from Kanaio mentioned that ancient Hawaiians used dogs to find freshwater springs along the beach in Waiaalailio.

Native Hawaiian Plants

Endemic and/or endangered plants were found in protected areass at Ahihi-Kina'u and Kanio Natural Area Reserves and along the coastline at Kanaio and in Kahikinui at Auwai, Alena, and Manawainui. The greatest concentration of rare plants was at Kahikinui below St Inez Church. Some informants spoke of plans to restock rare endemic plants throughout Kahikinui.

The Auwahi ahupua'a has a unique concentration of rare and endangered Hawaiian plants (see Appendix __, response by Renee Silva). These plants were essential to the survival of Hawaiians who were tied to a subsistence economy. Hawaiians learned how to survive in an environment that was characterized by extreme heat, lack of surface water, and a harsh ocean condition. Materials derived from plants were used for making canoes, nets, spears, ropes, and sails. Although fishing and boating technologies have progressed to the point where most of these materials are no longer used, plants are still being used for food, medicine, adornments, and craft and building materials. A critical reason for protecting native plants was that they were such an integral part of the culture--so it was believed that the culture do not exist without its plants. Informants expressed concerns about the endangered status of many native plants in the Auwahi forest. One plant expert who studied the area explained:

> This concentration of plants is famous. It crosses the road on both sides. It flourished because of the cloud cover, being fed by the clouds. Its one of the best dry forests in Hawai'i. Rock [scientist from a 1910 plant study] said that its still a good forest if we leave it alone. But if we keep putting power lines and houses and goats and cattle, then that's not compatible with the native forest. We'll lose it.
>
> From the hill [Lualailua Hill], there is a big colony of 'A'ali'i. A rare fern, and Sandalwood, and all kinds of Hawaiian trees. Ha'o, Orohopia, are all in this area. The hill might be slowing down the clouds, there is moisture there. Theres a species of Ko'oko'olau at Waiopai, right on the beach. Ahakea, Koa, are trees for canoe-building. There is few Koa trees. The best elevation is about 2,600 feet way up in the clouds. Theres a small colony right behind Lualilua Hills. Kupimoi, a nice healthy colony. The Natural Area Reserve is there because of the Kupaoa plant.

Access and Trails

Mauka-makai trails linked the Pi'ilani Highway to the shoreline at Keauhou, Kanaio, and Kahikinui. Trails leading to traditional use areas were viewed as very important to the continuance of subsistence activities. Informants mentioned that trails were critical to gaining access to hunting and fishing areas and served to reduce the amount of effort it took to obtain resources. For example, one informant stated that he hunted or fished all day using one trail.

Trails reduced the amount of time and effort it took to access an area, fish and game were generally within close proximity of the trail, and trails allowed for an easier return with a heavy catch. He further explained:

> To me, yes [trails are important]. Trails go mauka (mountain) and makai (ocean), go everywhere. Trails connect for fishing and [hunting]. There's one trail. You hunt. First, put in a bag, hang 'em on a tree. Go down to the ocean and get you fish, opihi, limu. Then you come home and pick them up. All in one day, 6 hours. All on one trail.

Maintaining and gaining access to traditional subsistence and cultural areas was a primary issue of concern for many informants. Traditional access routes that extended from mauka to makai were threatened by changes in ownership and control of lands over the years. Big corporations and government agencies either owned or had jurisdiction over large tracts of land which made it difficult, if not impossible, for Hawaiians to cross over them on their way to traditional subsistence grounds. Lack of access was believed to be a major obstacle in the continuance or re-establishment of Hawaiian customs and practices. Some properties were gated or fenced to deny passage to any unauthorized persons. In other cases, informants knowingly exercised their indigenous rights to access subsistence resources by crossing over underdeveloped private property.

Other informants mentioned that permission and/or keys to gates were required to enter into some areas. However, one informant said that the process of obtaining a permit was generally not worth the effort. For some areas, persons were required to stand in line to get keys from the Department of Land and Natural Resources--and there was a limited amount. The process served as a deterrent to prospective users.

Informants identified the following traditional access trails:

* An old horse trail from Makena to Ulupalakua.

* A trail in Keahu.

* A trail from la Perouse to Kanaio.

* A trail in Kano'i.

* A mauka-makai trail at Cape Hana Manioa.

* A trail to the beach in Wailea that was once easy to use but is now cumbersome because of the resort.

* A trail from Kanaio to the beach that was difficult now because of the ranch.

* A trail to Cape Kina'u that was used to pick limu, opihi, fish or even to pick cat-eye. It is now restricted because of the Nature Reserve Area. Some felt that the reserve, which was a famous fishing area, should be open on a seasonal basis to Native Hawaiians.

Subsistence Activities

Until about 30 to 40 years ago those residing in South Maui were required to rely on subsistence activities because Hawaiian families had limited incomes and lived a long distance from stores. Families, which were believed to be larger back then, were easier to feed through a subsistence rather than a cash economy. Necessity was the driving force behind learning subsistence practices and honing one's skills in order to catch enough to feed the family. Subsistence in South Maui was thought to require a higher degree of innovation because of the difficulties related to a dry and desolate environment. Resources were more difficult to identify, somewhat more wary because of a lack of cover or refuge, and less abundant because of the lack of water and food sources. One informant explained his feelings about the situation:

> To live here you have to have the background or you won't make it. This place will eat you up, because you gotta know the land, the ocean, what you can survive with in the mountain in case anything happens. Survival is the main thing here. There is a lot of things you can survive off of. I cannot starve living here. And if I do, its my own fault, nobody else's, because everything is here.

From an insider's perspective, the 'aina was believed to be productive and fruitful. There were ample resources to carve out a living and the wisdom handed down from their kupuna provided an understanding of how to harness the resources without exploiting them. Hawaiian subsistence practices were compatible with the perpetuation of a finely balanced, self-regulating ecosystem. The balance changed with the onslaught of westerners and different approaches to land utilization. The introduction of new economies spelled disaster for the already vulnerable landscape and associated lifeways. One informant lamented:

> It wasn't until the white culture came in and decided that we had to change the way we lived--that we needed to have telephones, toilets, electricity, this and that. You don't need to destroy the land to live a good life, which is basically what western culture has done.

Despite the adverse effects of a changing economy, subsistence practices were maintained over the years. Fishing, hunting, and gathering in South Maui provided a basis for food, recreation, exercise, and culture for many area residents.

Informants believed the Honua'ula, Kahikinui, and Kaupo districts possessed many pristine sites where subsistence activities occurred or could be reinstituted. Of particular interest was the possibility to access medicinal plants in the Natural Area Reserves of Kahikinui and

Ahihi-Kina'u. Replanting and La'au Lapa'au (traditional Hawaiian use of medicinal plants), was a strong possibility. Native Hawaiian botanists and La'au Lapa'au practitioners had previously surveyed the area, collected seeds and plants, and were in the process of restocking native plants.

Fishing and Ocean Gathering

Fishing and ocean gathering occurred along the coastal areas throughout the region (from Makena to Kaupo). The techniques used to catch fish differed according to the particular locality. For example, fish traps were found in Makena and Kanahena where moi and weke were caught. Akule were found in abundance in La Perouse Bay at Kalihi and Nu'u Bay at Nakula. Ahi and ono were caught in the deeper waters near Mamalu Bay at Naholoku. Mullet, ulua, manini, and uhu were caught at various spots along Kahikinui. Popular fishing areas, especially for those from outside of the region, were the bays which had easy access (e.g., Maknea, Kanahena, Huakini, and Nu'u). Other areas were visited less frequently because they were a distance from the road, and had rugged and difficult coastlines. Experienced and/or resident fishermen visited these areas because they were familiar with them and often had ahupua'a tenant rights and other types of priviledges.

Ocean gathering occurred along the shoreline where opihi (limpid), limu (seaweed), and kupe'e (ocean snail) were picked and a'ama (crab) was caught, he'e (octopus) was speared when walking the shoreline or diving, ula (lobster) and crabs were caught while diving, and some species of crab were caught in traps as far as 2 miles from shore.

As mentioned in the previous section, some areas were more difficult to access because of restrictions. Informants said they would go fishing at Kanahena and Keone'o'io before the Natural Area Reserve designation. This was one of the best fishing grounds on the island. Uncle Harry Mitchell (well-known Kupuna) was arrested at Kanahena for picking medicinal herbs. One person felt that Hawaiians should have been allowed to use the reserve in a way similar to the arrangement in Kalapana. Over there, long-time Hawaiian 'ohana members were allowed to use areas for subsistence that fell within the Volcano National Park boundaries.

Disputes over access to fishing grounds was a constant concern for many informants. One person described a problem between his family and a ranch ~~over~~ owner who owned or had jurisdiction over a road that provided access to the shoreline. He said it was difficult to concentrate because you were always aware that the ranch might come down on you when you were using the road.

Methods of fishing that were reportedly used included nets (throw and surround nets), pole fishing (whipping and dunking), harpoon, and spearing fish while diving. The techniques used to catch fish varied according to location. For example, Nu'u in Kaupo the water was nice and safe for landing boats. When the Akule came into the area, people would go and surround them with nets and haul them in. Fishing practices were also tied to the direction of the ocean

currents. At Nu'u the current went out to sea. At Kanaio, the current came in towards the shore and fewer people were needed to lay net. Experienced fishermen felt that this was an important distinction.

Hukilau was a traditional fishing practice used by Hawaiians in the area. It became less common because of regulations imposed by the state. One informant described this method:

> You take a rope and you put ti leaves every so many feet and you take rocks and tie them. Then you use the Wiliwili tree floater. When you go through an area, you can surround the whole reef without a net getting tangled up in the rocks. So it misses the bottom of the ocean. What you do with this floater, the fisherman would be swimming...as you go along, you roll the rope out over the floater. As it gets shallow, you bring it in here. Once you get it to the bay, you can surround the whole bay with that. This kind of fishing is not very selective, so you take all of that fish that you don't eat, you throw it back in the ocean. The tragedy now is that you cannot go in there and show how to do it, because of today rules and regulations. We try to get around that anyway. We did the hukilau with the children, but they can get into the water only up to the waist. Now there are regulations against the hukilau, but you can get an exemption if its for family or cultural things. In 1988 we had a hukilau in Kanahena.

The fish house was another traditional technique that was used by fishermen at Makena and Kanahena to catch fish such as a'alea (Hawaiian hog fish). The informants who described this technique believed that it was an effective, yet uncommon practice. One informant stated:

> To build the fish houses in the ocean, make a ahu (piles) of stones, with the limu facing up, never put the rock upside down. When the tide come up all the mali'i goes into the stones. What you do is cover the pile of stones with the throw net, take the stone away one by one and then you have all the fish inside the net. This is a method of fishing that not too many people do know. Its a rare way of fishing.

A recurring theme among fishermen was to take only what was needed and to only go fishing when the family's fish supply was down. Many informants spoke proudly about carrying on this traditional approach to ocean conservation. They believed that if they were not sensitive to the marine ecology, then nature would impose its own sanctions by not providing food. One informant mentioned that he was taught by his elders to not go fishing during the months of October to December. If he disobeyed this rule, fishing would be unsuccessful during the other months of the year.

Some fishermen expressed concerns about the inappropriate practices of outsiders or foreigners who were taking too much and often selling their catches. Some non-Hawaiians were thought to lay too much net and catch too much fish, thus violating the traditional rules of subsistence. One informant said:

I have nothing against Filipinos or immigrants but they come here and they fish this place out--everything. And I tell them, why don't you leave some fish for me?

There were complaints about outsiders using nets that were illegal because they had small eyes which didn't allow smaller fish to escape. One informant believed that the eye of the net should be 3 inches so that juvenile fish could escape and grow to adult size.

Most fishermen were aware that fish were a valuable commercial resource, yet were more inclined to follow old ways by fishing only for personal or 'ohana use. They were also aware store-bought fish were becoming very expensive and the ability to fish was a way to save money and maintain a traditional diet that was healthy and otherwise beyond their affordability range.

The types of fish that informants reported catching included the following:

A'alea
Aholehole
Akule
Aku
Blackfish
Kumu
Manini
Moi
Opelu
Uhu
Ula'ula
Ulua/Papio

Other types of ocean animals and plants that were gathered by informants included:

Crabs (Kona and Kuhono)
He'e
Kupe'e
Limu
Opihi
Ula

Plant Gathering

The gathering of plants occurred in a scattered fashion along the Pi'ilani High way and along the coastline. The were several gathering spots in Kahikinui below Luala'ilua Hill and St. Inex Church. Plant gathering has declined through the years because of deforestation and

the privatization of land. Knowledge about plants and their traditional uses that were specific to South Maui has declined because of depopulation and changes in the economy. The introduction of foreign species of flora and fauna also took a toll on endemic species whose numbers and habitat were in serious decline. There were active efforts by groups of younger Hawaiians who were attempting to restore the vegetation through planting and watering. The ultimate goal of native forest revegetation was to bring back the rains to the lower elevations which were requisite to resettlement. Increased amounts of water would also enhance the forests and revitalize rare and endangered flora that were once an integral part of culture and lifestyle.

Informants reported gathering a number of plants for food and other purposes (See Appendix __). Many of these plants were gathered in the dry coastal areas while family members engaged in other subsistence activities. Subsistence involving multiple family members meant obtaining everything that was useful and generally not limited to a particular resource. One informant mentioned that his family went fishing to Keone'oi'o for o'io (bonefish) and ula (lobster); but at the same time picked mango at the site of an old house. The 'auhuhu plant found at Cape Kina'u was traditionally used to stun fish. The reddish wiliwili (Hawaiian leguminous trees) seeds were found in Makena. These seeds were used for making lei (necklaces) and other adornments used in hula. Noni, whose fruits had numerous medicinal qualities, including the treatment of stomach problems and diabetes, were found near Pu'u Ola'i. Kauanoa, an orange, creeping vine-like plant that was woven into leis was found in the sandy coastal areas. Another informant mentioned that he was curing his asthma by using certain plants found in Kanaio.

Other plants were gathered in the higher, cooler mauka areas. Mamake was gathered by informants who journeyed to the higher elevations on the slopes of Haleakala. The leaves which had medicinal qualities were used for making tea. A variety of medicinal herbs used in la'au lapa'au were also found in the higher forested areas.

Hunting

Hunting practices were not limited to particular areas but based on the movement of game. There was goat hunting in Kanaio and Kahikinui along the shoreline, and all along the Pi'ilani Highway on both sides of the road.

A common sentiment regarding wild animals in South Maui was that their population was too large and needed to be reduced or eradicated. The goats that roamed freely throughout the district and pigs that were mainly found in the upper forested areas were believed to be responsible for the destruction of native plant life. These animals ate seedlings or young plants or uprooted them, thus preventing them from becoming established or expanding their range. Efforts were underway to control the number of animals in order to allow for plants to rejuvenate.

Some Hawaiians (i.e. Ka 'Ohana O Kahikinui) had detailed plans for controlling animals. These plans called for goat eradication through hunting and trapping, the elimination of cattle by moving them to other areas, and fencing areas to limit the range of pigs to allow for the expansion of the forest to the lower elevations.

The animals that were caught were not wasted. Younger Hawaiians engaged in trapping pigs and goats and selling them to those who would use them for food. One informant stated that some young people sold live pigs to Filipino families who slaughtered them or raised them to a more desireable size. Other means of preparing goat meat included drying or grounding it to make hamburgers. Pigs were often prepared in the imu and used for 'ohana or group functions. One informants described this process:

> We do kalua pig. We have more ti leaves, bananas and sweet potatoes. The tree we use for kalua pig is guava, kiawe, hardwoods, softwoods....those woods that don't smell. We do kalua pig sometimes once a year, sometimes six times a year. Last year we did it 5 times. We get the stones from Nu'u, nearby the river. If I do not have enough bananas and ti leaves I go mauka for that. One pig for a large family may be last one week.

Plant Cultivation

Although the district was generally perceived as desolate and dry, informants contended that with some water and care, the land became very fertile and productive. Kaupo was known for its very large potatos. As many as 10 varieties were grown and they were as large as 5-7 pounds. Sugar cane and vegetables were also grown at Kaupo. At one time Kahikinui was famous for its 'uala patches (sweet potato) that extended for 3 to 4 miles along the road. The area was also good for growing squash.

Families in Kanaio were planting a variety of trees and plants on their homesteads that were intended for consumption and other uses. A number of trees and plants were mentioned: a variety of fruit-bearing trees, bananas, papayas, 'uala, ti, taro, flowers and herbs. Plants were also grown to decorate, maintain an environment, and prevent erosion. For example, one informant grew ilima around the family grave and another cultivated pohuehue (beach morning glory) to hold down the sand during windy periods.

Plans were in store to cultivate endemic plants, particularly Hawaiian herbs that could be used for la'au lapa'au. One goal among a community group was to establish an herbal medicine school to educate young Hawaiians on the uses of plants that grew in Hawai'i. Kahikinui was considered an ideal place because of the availability and/or potential for growing plants that were essential to these traditional practices. The same group was underway with a seedling project and planning to plant and propagate endemic trees in order to restore the watershed.

PERCEIVED IMPACTS OF HGP

Native Hawaiian Rights and Intended Use of the Area

For many informants, the concept of HGP was considered incompatible with their image or plans for South Maui. General concerns were raised over how HGP would fit with efforts to restore a sovereign Hawaiian nation, efforts to obtain land leases from the Department of Hawaiian Homelands (DHHL) to resettle the Kahikinui district, and homestead plans for Hawaiians who hoped to settle on kuleana or private land parcels held by 'ohana members in Kanaio. The concern was related to an assumption that South Maui was generally unpopulated and therefore suitable for HGP development. This assumption was thought to preempt or alter plans and efforts to resettle Hawaiians in this area. For example, the power lines which would run parallel to the highway require a buffer zone, within which, housing development could not occur. If Hawaiians were granted lands for resettlement, they would have to live away from the highway. This would increase housing and infrastructural costs and place a heavier financial burden on DHHL and leasees who may have limited cash resources.

The Kahikinui area that was under the jurisdiction of DHHL encompassed an area of roughly 2,500 acres, and pastoral lots were 10 acres. One informant calculated that about 250 families or 1,000 persons would be settled in the area when all of the lots were awarded. Envisioning all of these families with children living under or within close proximity to the power lines was worrisome to this informant who believed that HGP would defeat the purpose of resettlement.

The idea of HGP appeared contrary to efforts by the state and federal governments to advance the welfare of Hawaiians through recent acts and policies. One informant believed geothermal development flew right in the face of the recent apology by President Clinton for the overthrow of the Hawaiian monarchy.
He said:

> They talk about returning the lands of the Native Hawaiians and now they want to take some of it back with the Geothermal. How they gonna explain that to the Native Hawaiians after they signed the agreement and after they apologized to them and said the Native Hawaiians will be returned to their original status of 1778, as it was before, to live in harmony with the land but yet now they're gonna come back and gonna take more land to complete this project.

A number of informants also questioned the purpose and benefits of HGP. Many felt that the project would benefit Honolulu and offer nothing to those residing in or using South Maui. This new energy source would also be a way to promote growth and development which was antithetic to the interests of Hawaiians. A limited energy supply was one way to control further growth. The idea that HGP would lower energy costs to consumers was also questioned. Some believed that energy costs would rise and used examples of other utilities (e.g., water) where increased supply did not translate into declining costs.

Environmental concerns focused on the impact of power lines and eletromagnetic fields on humans, how power lines and towers would impair the scenic landscapes, and how increased lighting would affect marine life. Changes in the natural environment would affect the behaviors of animal and plant life and ultimately impair one's ability to subsist.

Spirituality and Religious Practices

Some informants expressed how the general concept of HGP was sacrilegious to Hawaiians who had ties to the area. Analogies were made between HGP and desecrating a church. Westerners were not inclined to destroy the serenity of their own places of worship, but paid little respect to the spiritual symbols of other people. Kahikinui was considered one of the last intact ahupua'a and a spiritual place and the HGP was thought to jeopardize the serenity, aesthetics, and living culture of the area. A 200 foot corridor beneath the power lines would disrupt mauka-makai trails, impact traditional travel patterns, and consequently impede traditional practices.

Some informants referred to an understanding that returning to the land was a means towards spiritual rehabilitation for Hawaiians. Most of their social problems were caused by disenfranchisement and displacement. The loss of connection to the 'aina was akin to severing the aha (umbilical cord) which meant losing mana (spiritual power). Returning to Kahikinui was a major step towards developing a spiritual foundation that was critical to well-being. One informant stated:

> Anything that is introduced to our ahupua'a as geothermal will definitely play a big damaging role in what we just talked about. Because what we want to do is come back here as a community, living parts of our ancestors ways, and of course permitting into our lifestyle part of modern technology, such as solar energy. But geothermal will be one more genocidal step toward the death of all Hawaiians. In other words, why give Hawaiians land to rehabilitate themselves, and in the same time put up something that is going to kill them spiritually? That is what we are talking about. A lot of this is our spirituality, because we have to feel something that is there, that is seen but unseen, something that makes you do what you do....because the place is pristine.

A related issue of concern was the desecration of burial sites that existed in the area. Informants with genealogical ties to the area believed that they were the caretakers or protectors of these sites and their destruction or disturbance would be the ultimate impropriety. The final resting place of one's ancestors was not to be tampered with. Disturbance of these sites would be another way of disrupting genealogical ties and continuity between Hawaiians and the 'aina. Informants explained the risks and probabilities of disturbance with HGP development:

> One of the first places where the native Hawaiians on Maui landed was right here, in Nu'u. This is the landing area. This is where they first came. They

settled this area. They were over 8,000 Hawaiians in Kahikinui alone. In the back side. Hana. there were over 80,000. So there's a lot of cultural value in Kahikinui itself.

Over 1,000 burials in Kahikinui. So, this is their sacred land. This is Hawaiian Homelands for the Hawaiians. And not to mention, most of the historical sites are on the makai side of the road. Seventy-five percent of its on the bottom side, so when you're running heavy equipment and putting up the towers, how are you going to get around the sites? There's no way that they could put it in without destroying thousands of significant sites.

We oppose geothermal. We are saying it would interfere with our alternative lifestyle that gives Native Hawaiians more options. We have so much sites, sacred places over here that it does not matter if you put lines around us, you are still killing us!

Economics and Land Value

Informants were generally interested in how HGP would benefit them directly. They were aware of the potential negative impacts it might bring, but also sought information to help explain why anybody from the district would choose to support it. Some informants believed that proponents would argue that HGP would lead to lower energy costs. This argument, however, was disputed by those who believed that lower energy costs would be offset by increases in property and utility taxes to pay for the development. Many also questioned the notion that HGP would actually bring cheaper energy to those residing in the district; and even if it did, it would not be enough to compensate for the negative impacts. Many believed that the bulk of the benefits would go to O'ahu while they would be forced to assume the bulk of the problems.

Those who owned lands (or lands adjacent) to where the power lines were proposed were concerned about the decrease in their property value. Informants also expressed concerns about increased taxes as a means to compensate for the development costs. Hawaiians were over-represented in the lower income brackets and would be especially vulnerable to increased tax burdens.

Alternative Energy Sources

Other informants took the position that all of this modern technology was unnecessary. Hawaiians had gotten along fine without modern conveniences. They relied on kerosene lamps and fuel for cooking, and generally appreciated the darkness of night. If alternative energy sources were to be developed, they should be consistent with land preservation. For example, numerous informants questioned why the government was not supporting solar or wind energy

instead of geothermal. These approaches were thought to have minimal affects on the environment. One informant speculated that Hawaiian Electric Company would not support these endeavors because they would be less profitable.

Geology, Noise, and Light

Some informants expressed a great deal of concern about the prospect of drilling for geothermal energy on the slopes of Haleakala which was a dormant volcano. Although it was not a part of the immediate HGP plans, some believed it was a future possibility. Those who raised this issue had strong opinions that Haleakala should not be subjected to drilling. Among the reasons given, there was a belief that there was too little known about the consequences of geothermal in Hawai'i (e.g., seismic activity, changes in sea level).

Noise was another concern expressed by informants, especially those who fished near Nu'u where the cable line would come onto land, and at Ahihi-Kinau, where the cable would re-enter the ocean. Those that lived near the highway were also concerned about the noise level and wondered how they would react in the long run to the buzzing sound being emitted by the electrical transmission line. Fishermen expressed concerns about how noise from HGP plants would obscure noises from the ocean that were important to gain one's bearings and avoid dangerous waves. One fishermen offered the following concern:

> Night fishing depends on the sound of the ocean and the waves for safety. If there is a big generating plant there, what about [being able to hear the] important sounds for night fishing? Exactly. There are a lot of people who utilize the trails for fishing down here. You see them at night. The sounds of the waves can determine if the tide's coming up. But if the generator covers the sounds, you can't hear the waves. That's an important impact. Not only that, but the power line's going to destroy your ears. Humming, high voltage humming.

Artificial light caused by HGP was a concern repeated by many informants. The lights emitted from sea to land transfer stations or along the transmission route would bring subtle changes to peoples' lives. For example, stars would not be as visible or experiencing the subtle changes in the colors of the sky as the sun sets and rises would be affected by light pollution. Fishermen and ocean gatherers who relied upon darkness (moonless nights) and localized light as a condition for when fish and kupe'e were most abundant expressed concerns about how various forms of marine life would be affected. Overall, the pristine character of an undeveloped landscape would be subject to changes because of increased lighting. One informant offered the following:

> We have taken the grandchildren out at night to study the stars. It is beautiful, the children love it. You cannot study nothing with too many lights. Crickets disappears with the light.

One informant also envisioned a string of lights attached to the transmission towers running 17 miles across South Maui. Without the cover of trees, the artificial lighting would have a major visual impact at night and turn a rural, pristine landscape into an industrial or city-like atmosphere.

Visual Impacts

A lot of concern was expressed over the impacts of the geothermal towers and 17 miles of power lines on the aesthetic qualities of South Maui's landscape. Informants raised this concern after reviewing structural plans provided by the Department of Energy[3]. Many believed that the structures would destroy the physical beauty of the entire area which is one of the last remaining undeveloped areas on Maui. The cumulative loss of scenic and undisturbed landscapes on Maui placed a premium on what remained pristine. One informant suggested the following:

> They [developers] need to re-design their plans so that it doesn't have the kind of effects that I can see before me. There is hardly any place on Maui that you can turn four corners and see everywhere, enjoy and appreciate the beauty. Nothing beyond two stories should be allowed here, and even that should be really set not go to beyond the natural flow of the land.

Some also questioned the appropriateness of the structural design and whether they would be able to withstand the climatic conditions of the area. For example, if the poles were as high as proposed in the design, they may have to be supported or reinforced by a series of smaller poles to sustain hurricane-force winds. The whipping wind of South Maui would necessitate either propping them up or lowering their height. The former would add to the severity of the visual impact.

Electromagnetic Radiation and Concerns About Health

There was a pervasive concern about electromagnetic radiation and its impacts on the health of people, livestock, and plants that lived within close proximity or under the power lines. Many informants believed that there was inadequate information available on the health risks and safety measures (e.g., buffer zone) that were essential to the planning of this project. For example, there were questions raised over whether radiation emitted from the lines had limited range or if it was possible that the strong winds could carry it and contaminate those living in distant areas. This concern led to the issue of how big buffer zones should be to protect people

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[3]Illustrations of the structures and transmission lines were provided by the U.S. Department of Energy in the document entitled Implementation Plan for the Hawai'i Geothermal Project, April, 1993.

and other organisms from the potential harmful affects; and if the buffer zones were too large, they could effectively remove large tracts of land from traditional use.

Fears about eletromagnatic radiation, whether actual or perceived, were thought to have an impact on subsistence and other cultural activities. The transmission line would sever ahupua'a because of how people would respond to it being there. Some informants speculated that practitioners would avoid going near the lines because of fears of contamination. This would reduce cultural use of the area because it would disrupt traditional patterns of access and mobility.

Marine Life and Ecology, and Fishing Grounds

Informants who engaged in fishing expressed concerns about the impact of the underwater cable on marine organisms. If eletromagnetic radiation were emitted by the cable, it could conceivably affect the health and behavior of fish. There was a lot of speculation over how fish might be affected. One informant suggested that limu would grow on the cable because it would emit warmth and would attract fish. Both would be contaminated by exposure to radiation. Humans who are at the top of the food chain would eventually suffer from eating fish caught in contaminated waters. Those who catch fish commercially, may not reveal the location where the fish were caught, and people consuming the fish would fall ill without knowing why.

Another informant compared the potential affects of the cable line to other actions by the state which had detrimental affects on the marine ecology. He made the point that major mistakes were made in Hawai'i because of a lack of understanding of marine ecosystems which prevented scientist from assessing negative outcomes. He shared the following information:

> This geothermal project is a new untested thing in Hawai'i. They go right ahead, and guess what? Its too late--they wish they never done it. Scientist have imported the ta'ape (yellow perch) in the Hawaiian waters, now this fish destroys the eggs of other Hawaiian fish and the eggs of the crab. Within three years the ta'ape has wiped out the Samoan Crab. This fish was only in 60 foot water. Now it is found in 500 foot of water. Fishermen get harder time catching paka [opakapaka] and naga [onaga].

A variety of concerns were expressed about the potential for damaging the cable and how it would be repaired. Unless it was somehow secured to the ocean floor, currents might sweep the cable from side to side causing damage. Another informant who engaged in bottom-fishing mentioned that boats in the area dragged anchor all the time. Boat anchors could damage the cable, or depending on how light weight it was, might be accidentally pulled up. This would pose a threat to unexpecting fisherman. A concern was expressed about how a cable lying 7,000 feet below the surface would be maintained and repaired. This informant believed that once the cable was layed, there would be no technology capable of repairing it.

Wildlife and Vegetation

Informants surmised that the power lines and structures would adversely affect wildlife and endangered plants in the area. Electromagnetic radiation would take its toll, along with power lines capable of electrocuting or damaging birds who unwittingly land on or fly into them. Some informants referred to situations on the mainland where power lines existed. Birds such as the bald eagle landed on lines and were killed. Informants suggested that sacred Hawaiian birds like the pueo (owl), ocean birds, and other birds that fly mauka-makai would meet the same fate. A reduction in the ocean bird population would disrupt fishing practices that depended on circling birds to find schools of fish.

Clearing the land for development and service roads would also mean destroying rare and endangered plants that lived within close proximity to the highway. Clearing the land would further diminish colonies of lama which were estimated to be 40-50 years old; kawila (exact location was kept secret); iliahe estimated to be 20-30 years old and threatened; and various species of plants (e.g. nehe) which were also endangered. Concerns were expressed about endangered plants in the Auwahi ahupua'a where 60% of the plants were considered endangered. The route of the power lines would go through an area where many of the plants lived.

A question was raised over why the proposed transmission line would go through two Natural Area Reserves. If the reserves were established in the first place, this meant that they were aimed at protecting endangered flora and fauna. For some informants, the development of transmission lines would signify that development would always take precedence over preservation. One informant shared the following thoughts:

> In the ahupua'a of Kanaio, whereby the State has proclaimed 846 acres of land to be set aside as a Natural Area Reserve and the geothermal lines will cross right over the 846 acres. What does the state intend to do with it? Are they just going to say "oh, we made a mistake, that we should never have put this area into a Natural Area Reserve?"

Construction, Maintenance, Traffic and Population Growth

In general, the development of HGP in South Maui would lead to a rise in existing levels of human activity. A variety of miscellaneous concerns were expressed regarding the impacts of construction and the maintenance of the transmission lines, additional traffic, and the in-migration of outsiders.

It was believed that the influx of newcomers would contribute to the degradation of significant cultural sites (e.g., heiau, graves). More people would mean more traffic on the roads and changes in driving behavior (e.g., faster drivers) leading to more accidents. Informants suggested that there should be careful planning aimed at regulating the amount of people who intended to settle in the area and to control population growth in South Maui.

MITIGATION

No Build Alternative

The most common response in relation to the question ab what could be done to mitigate HGP impacts was that it should not be built. Many infor ts were very adamant in their opposition to the project. HGP was not considered a ...tive ining concept because it was perceived to be incompatible with existing cultural pract and lifestyles. Many informants stressed the importance of self-sufficiency among H ians (by community or island) through the development of community-based economies. e idea of developing an inter-island energy source was viewed as another approach to encour...ing economic dependency while at the same time ravaging the environment.

Despite the widespread opposition to HGP among informa...ts, some suggestions were offered to mitigate the anticipated negative impacts. The suggestions generally fell into the categories that the cable line should not touch Maui or should not go over land.

Suggestions to not touch Maui:

* The cable should bypass Maui altogether. If it was technologically feasible, the cable line should never touch land until it arrived on O'ahu.

* If a booster substation were essential to the transmission of power, it should pass over Lana'i or Kaho'olawe, not Maui.

Suggestions to not over land:

* A booster station could be placed on a large ship anchored Southwest of Kaho'olawe--as far away from inhabited areas as possible. Coast Guard weather ships never leave their location at sea. Some have been anchored for over 20 years.

Still others believed that negative impacts could not be ave d. If the cable remained exclusively under water, fish and migrating whales would be ...cted. This would be a detriment to those who relied on fishing. Choosing one route over another would boil down to choosing the lesser of two evils. This was not a predicament inf nts wanted to be in.

Management

A number of proactive suggestions were made by Hawaiian dividuals and members of Hawaiian organizations (e.g., Ka 'Ohana o Kahikinui) who had inte...ons of resettling the area. They were as follows:

* Hawaiians should be given the opportunity to manage their own lands. Land management was their indigenous right and outsiders who were unfamiliar with the area should not make decisions that would ultimately affect their homelands.

* Traditional cultural and natural areas (e.g., heiau, endangered plants) should be respected and protected. The status of significant areas and sites should not be altered in order to accommodate new development proposals. These areas are sacred and no development should take priority over them.

* Cultural and natural sites should be managed by 'ohana or groups who live within close proximity or have genealogical ties to the area. In most cases, they are the natural caretakers because they have the most frequent contacts with and are most knowledgeable about the sites.

* A community advisory organization should be involved in the general planning for the South Maui area. This organization should be at least partially comprised of kupuna (elderly) who would advise others on appropriate cultural activities. Input would also come from 'ohana representatives from various ahupua'a on issues directly affecting them.

* The money spent of HGP would be better used promoting appropriate, smaller scale technology for homesteaders. Suggestions included solar energy and alternative water and sanitation systems.

There are existing land use plans that are designed to promote the resettlement of Native Hawaiians at Kahikinui. In the past, the Department of Hawaiian Homelands (DHHL) who has jurisdiction over the district leased the land for ranching. The leases expired in March of 1992, although extensions have been granted to enable the lessee to remove remaining cattle from the premises. In October of 1993, DHHL awarded 2,500 acres of undeveloped pastoral and homestead lots to Native Hawaiians on the waiting list.

Meanwhile, a community-based organization referred to as Ka 'Ohana o Kahikinui has occupied the land while waiting for the leases. With the aid of professional planning consultants, they have developed a master plan for Kahikinui. A document entitled <u>The Conceptual Community Land Use Plan for the Ahupua'a of Kahikinui</u> (February 22, 1993) proposes the following land designations:

Land Use/Designation	Acres
- Forest Reserve	7,300
- Reforestation/ Horticulture	2,000
- Pastoral Lots	4,000
- Self-Sufficiency Homesteads and Buffer Zones	4,000
- Community Center	500
- Makai Access Areas	500
- Cultural Management Zone	4,500
Total Acreage	22,800

In the plan, pastoral lots are located mauka of the Pi'ilani Highway and makai of the reforestation/horticultural zone and the forest reserve. Self-sufficiency lots are makai of the Pi'ilani highway. The cultural management zone extends all along the coast and shoreline. The 'Ohana has plans to undertake reforestation efforts (by propagating indigenous trees) in order to bring down the cloudline. First, the goats, pigs, cattle and deer must be fenced out and eradicated. This plan is intended to give Native Hawaiians the option of choosing their own lifestyle and to be self-sufficient.

The 'Ohana also plans to identify and restore archaeological sites. The idea is to a make them "living archaeological sites" which includes posting information and walk-throughs instead of an obscure site that is viewed by cars passing on the highway. The whole ahupua'a of Kahikinui would be a classroom where Native Hawaiian cultural practices, such as la'au lapa'au, would be taught. Children would also be taught Hawaiian approaches to land and resource management.

Finally, one kupuna summed up his feelings about land management and the ultimate rights of Native Hawaiians to the land:

> From Kananena to Kaupo, from the ocean to the mountain, the Native Hawaiians have the rights to do whatever they see fit. This entire area, as far as hunting, preservation of Hawaiian historical sites, this all falls within their realm of claim, because they belong with it. This is their land. There should be no one to tell them that they have no right to cross this land. They have the right to do that. Everything is theirs. The entire ahupua'a of Kanaio and Kahikinui is theirs. Only the Native Hawaiians can manage their own land. We have had other agencies come in and say, "we're gonna manage this and that." A good example is right over this ridge here. There are 846 acres that the State set aside as Natural Area Reserve. They're not back there protecting it, taking care of it. The Hawaiians take from the land only what they need. They take from the ocean only what they can use. And that is to feed their families. This is not

something that they learned today. This is something that was passed on down to them from their ancestors, from their kupuna. The makua to the mo'opuna. The land will give you the fruits and the food that you need to sustain life. The ocean will provide you with the fish and the food. The mountains, where the rain comes from provides the water. But all of this today, the Native Hawaiians are struggling to get back. So as far as all the fishing grounds go, I fish this entire area. I've hunted this entire area. There was no need for my father to go and say, "Ulupakalakua Ranch. I need your permission to cross your land to go hunting." When he wanted to, he saddled his favorite horse or mule and we went hunting. We didn't care who had the interest on the land, all he knew was that the land belonged to the Hawaiian people. If we are going to say who has the right to go out here any place they wanted to and get subsistence to live on, the Hawaiian people do.

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APPENDIX __
Hawaiian Plants and Their Traditional Use
Found in Honua'ula and Kahikinui in South Maui

- 'A'ali'i (Dodonaea viscosa), hardwood used in house building; leaves or bark used to make a lotion for rashes and skin eruptions.

- 'Ae, (Polypodium pellucidum), native fern, wood used in spear making.

- A'e, Manele (Sapindus saponaria), seeds strung into lei and neckaces

- 'Ahakea (Bobea elatior), a smaller trees used in canoe-making (carved pieces at the bow and the stern), poi boards, paddles, etc.

- Ahuhu (Teprhosia purpurea), poisonous plant used to catch fish.

- Ahu'awa (Mariscus javanicus), a sedge, used for cordage and for making fiber strainers.

- 'Akia (Wikstroemia sandwicensis), poisonous plant used to catch fish; the bright orange or gold berries are used in making lei; also used for cordage.

- Ala'alawainui (Peperomia species), endemic medicinal plant used to make a tonic for debility, tumors, various internal ailments and uterine problems.

- 'Alahe'e, 'Ohe'e, Walahe'e (Canthium odoratum), indigenous tree or shrub used in place of kauila; hardwood used in making an adz to cut the soft wili-wili wood; used for tools to till the soil, o'o digging sticks; it also furnished the small poles for keeping open the mouth of the bag net; the leaves produce a black dye.

- 'Aweoweo (Chenopodium), subalpine shrub.

- 'Awikiwiki (Canavalia galeata), vine for making fish traps.

- Ha'a (Antisdema platyphyllum), or Hame, native tree, used in house building; suitable for fuelwood.

- Ho'awa, Ha'awa (Pittosporum terminalioides), suitable for fuelwood.

- Holei (Ochrosia species), used as yellow dye for tapa.

- 'Ihi (Portulaca vilosa), prostrate to ascending, succulent, perennial herb with yellow flowers. Grows on lava and on shores. Edible, leaf infudsion used to treat tuberculosis ans asthma; medicinal root.

- 'Ili-ahi, 'Iliahialo'e (Santalum), sandalwood, shrub, used as fragrance to shent tapa and later on for other commercial uses.

- 'Ili'e (Plumbago Zeylanica), the juice from the roots was used to make tattoing pigments.

- 'Ilima (Sida fallax), used to decorate the altar of the halau Hula: the flowers are used to make lei and for mild laxative for babies.

- Kauila (Alphintonia ponderosa or Colubrina oppositifolia), hard wood excellent for spears, tap beaters; for making 'o'o, digging sticks; for making fish baited sticks to trail from a canoe, for making fine 'auamo, carrying poles, etc.; now this plant is rare.

- Kauna'oa Pehu (Cassytha filiformis), leafless, herbaceous, parasitic wine coastal and lowland. various medical use. shampoo/hair conditioner use in Polynesia.

- Kauna'oa (Cuscuta sandwichiana), stem infusion used to treat different ailments.

- Koa (Akacia koa), the largest trees, canoes, surf-bcards, hoe, or paddles, spears and calabashes.

- Koali 'awa (Ipomoea Indica), medicinal plant used as purge and in treating broken bones and body aches.

- Ko'oko'olau (Bidens), endemic medicinal plant used as a tonic and for throat, stomach and asthma; an herb used to make a tonic tea.

- Kupaoa. Na'ena'e, Hanupaoa, Hina'aikamalama, Ne'ine'i (Daubatia subgenus raillardia), its leaves were used to shent tapa.

- Lama, (Diospyros sandwicensis), endemic ebony, its wood was used in house construction and for erecting enclosures for certain idols; used on the altar for Laka, the godess of Hula. Fruits were eaten.

- Maile (Alyxia oliviformis), associated with the worship of the gods; represented the four Maili sisters, legendary sponsor of Hula; used to make lei and scent tapa.

- Makaloa (Cyperus laevigatus), sedge, used for making sleeping mats.

- Mai'a, (Musa acuminata), banana, used to decorate the altar of the halau Hula.

- Moa (Psilotum nudum), stems brewed into a tonic for pbody pains and as a laxative.

- Naio (Myoporum Sandwicense), hard wood and sweet scented wood; used for hale posts and thatching poles.

- Naupaka Kahakai (Scaevola taccada), littoral shrub, medicinal plant: root bark pounded to treat cuts and punctures.

- Nehe (Lipochaeta), Shrub.

- Nena, Kipukai (Heliotropium curassavicum), perennial coastal herb. No recorded use.

- Niu (Cocos nucifera), the coco palm tree; kinolau (body form) of the god Ku; its fruits are eaten; offered in religious ceremonies; the juice is a drink; the husk is used for rope, cordage aha, the stem is uded for making drums; the leaves to make fans, pa'ahi launiu; the puaaniu, niu flower, laua'e leaves, or kupaoa were used to impregante the pa'u dyes.

- Nohu (Tribulus cistoides), prostrate perennial herb.

- Noni (Morinda citrofilia), a small tree or shrub, its bark furnish a yellowish-brown dye to stain the tapa yellow; its fruits were eaten in case of famine; also of medicinal use for skin eruptions and cuts and stomach problems and diabetes.

- 'Ohai (Sesbania tormentosa), shrub.

- 'Ohe (Raynoldsia sandwicensis), reputed to be a poisonous aladian tree, used for making poisonous images.

- 'Ohe (Bambusa glaucifolia), the bamboo, used as a fishing pole, when splintered, it is used as a knife.

- 'Ohi'a (Metrosideros Polymorpha), same as Lehua, a large tree where birds were caught. It grows on the lower mountain slope, it representedthe god Kuka 'ohia'a Laka. Its wood was used for: idol making, posts, rafters for houses, enclosures of temples, fuel, sticks to couple double canoe, etc.

- 'Ohia Lehua (Metrosideros polymorpha), used for house rafters; bark or young levaes used as a gargle for sore throat.

- Olopua, (Nestegis sandwicensis), see: Pua.

- Papala Kepau (Pisonia species), the exudate around seeds was used to catch birds.

- Pa'uo Hi'iaka (Jacquemontia ovalifolia) Prostrate vine with stem, found in rocky and sandy shores. Named by the Godess Pele "the skirt of Hi'iaka", as it had grown to cover her baby sister.

- P:li (Heteropogon contortus) a grass used for thatching houses, used in the hula ar to Laka.

- Pohuehue (Ipomoea pes-caprae), the beach morning glory, was used for cordage.

- ola (Claoxylon sandwicense) small native tree; wood used in spear making.

- 'Uhaloa, or Hi'aloa (Waltheria indica), weed, medicinal plant, root bark chewed and the juice swallowed or gargled for sore throat and coughs.

- 'Ulei (Osteomeles Anthyllidifolia), a tough tree or shrub, used to make thick, heavy darts for skating over the ground in the ihe-pahe'e game; for fish spears; it also furnished the small poles for keeping open the mouth of the bag net; used to make 'o'o digging sticks; leaves, flowers and fruits were used in lei wili. Fruits were eaten.

- Wiliwili (Erythrina sandwicensis), a leguminous tree, found on dry coral plains and lava flow; it is a very buoyant wood used for making surf-boards and outrigger floats; its seeds are used in the lei wiliwili.

APPENDIX ___
Excerpt from Interview with Renee Silva

The back side is very historical, there are many archaeological sites. These sites show how the Hawaiians survived in an extremely dry place. Extreme hardship, with no running streams and hot weather, and a harsh ocean. Hawaiian culture was based on the use of the plants. No matter what the Hawaiians did, plants were involved: fishing, the canoe is from plants, the net, the spears, the ropes, the sails--they're all from plants. Hawaiians could not have survived without the plants, particularly in South Maui. Plants played a major role. One of the value of protecting the plants, aside from scientific and medical use, is that they are closely associated with the Hawaiian culture. So Hawaiian culture cannot exist without the plants. Hawaiians were planters, expert cultivators. The area has been designated by the Department of Land and Natural Resources a Natural Area Reserve:

The biggest concentration of native plants in South Maui is right in the Auwahi forest. A famous forest, when the scientist Rock went to Auwahi in 1910 is was very impressed. He even found the creeping ohia tree. It's not there anymore. This concentration of plants is famous...it crosses the road, on both sides. It flourished because of the cloud cover, being fed by the clouds. It's one of the best dry forests in Hawaii. Rock said that it's still a good forest, if we leave it alone. But if we keep putting power lines and houses and goats and cattle, then that's not compatible with the native forest. We'll lose it.

The grass is in the Kanaio area, and underneath the power line there is even Maile, makai side of the highway, in the lava. The Sugar Cane, Acacia Koa, are right behind Lualailua Hills. All Haole koa and Lantana, grow even up to the hill. From the hill, there is a big colony of 'A'ali'i. A rare fern, and Sandalwood, and all kinds of Hawaiian trees, Ha'o, Orohopia, are all in this area. The hill might be slowing down the clouds, there is moisture there. There's a species of Ko'oko'olau at Waiopai, right on the beach. Ahakea, Koa, are trees for canoe-building. There is few Koa trees. The best elevation is about 2,600 feet way up in the clouds. There's a small colony right behind Lualilua Hills. Kupimoi, a nice healthy colony. The Natural Area Reserve is there, because of the Kupaoa plant. Raillardia belongs to this genus. Lineris is the species. Some of them have different names. That is the only colony on Maui. It is right next to the road, so the power line is going right on there. Lama is all along that trench on the side of Okukano Mountain. There is Maile, Mamane, Makaloa, is along the beach. Aki is common grass. At Manowainui there is a nice colony on the beach. Mamaki is way up in Auwahi. Rare Naupaka is at Kamoli Gulch. The one with the yellow flower. That's the only colony on East Maui. Right next, makai side of the road. There's also Nehe, right above it, that's an endangered shrub. Milo is down at Kanaio Beach. Had to be planted, because it's a Polynesian-introduced. Moa, a fern with no leaves, very ancient, 300 million years old. A big colony scattered all around near Kanaio Church. Naio is found makai of the road. Nena is at Waiopai. There was about 10 plants. There's a Hawaiian coconut...there's several trees on the outside of Pu'ulai, right in middle of La Perouse Bay. But that tree is doomed it cannot pollinate itself. There is Nehe. Another endangered species, not listed. There's one more in Lualilua Hills, inside the road...Forbesiai, is makai the road, near the water

tank. Another 1/4 mile on the Kaupo side of Lualilua, near the sandalwood, another Nehe. Nohu grows on the beach at La Perouse Bay. Noni is in La Perouse Bay, in the middle. Ohai, they found a colony just recently at Pu'u Pimoi--it's endangered, close to the power line. It's a beautiful red flower, found especially in Kanaio area. Ohia is right on the highway next to Lualailua Hills, 15-20 quite a few scattered all over. There is Lehua unusual for dry places. It protects all the Hawaiian forests. Underneath the Ohia, there is Maile, ferns, creepers, vines, shrubs--it protects all that. It saves 10-15% more soil in the ground and almost every native bird feeds on it or nests on it, but at different elevations. One is the canopy, one is half-way; almost all of them use the Ohia, all the hepapites are on the branches. Even the parasites are on the branches. Even small ferns, not moss, not lichen, all grow on the branches and stems. All the insects like it, too. Olopua is all over, actually. Behind Lualailua Hills, there is a nice big colony. All the branches come out from the bottom. That's the one you use to make spears, the digging sticks. Opahi is the one they use to make. Papala Kipau, a tree, used to catch the birds--it is sticky. Haluohiiaka, a vine, is in Waiopai, all along the shoreland. Pia is a Polynesian arrowhead. Pohinahina is along the shoreline at Nu'u. Phuihui is the big one...it's indigenous at Kanaio Beach. A big stretch in Kanaio Beach. Puola--one or two trees. They're disappearing, they're not endangered yet. By the time you put it on the endangered list, the tree is gone already. Puakala, the poppy with white flowers. Uhaloa there's lots of them all along the Lualailua Hills and the Church. Uhiuhi is a rare tree. It was found all in the back slope and now it's gone. Hardwood tree, throw in the ocean, it sinks. It was on both West and East Maui, but now it's gone. Ulei is at any place along the road. Wiliwili is a leguminous tree, with red seeds. Thousands of them. A very rare grass on the East Coast, Iscamelia brioli, is an endangered species. There's one named Tetramalopium Sylviai--found on Maui and Molokai, on the Halawa end, and the Kanahena the line is going through one sensitive place. The blind shrimp is found there. There's a little pond there, about 1/2 to 1/4 of an acre, inside the Natural Area Reserve. Ahakea is in the Kanaio forest. That's a rare tree you don't find in Auwahi. Ahuhua is on the coast, on this side of La Perouse Bay. Ahuava is at Waiopai, close to the ocean, just past Manowainui, it is used for fiber strainers. There's plenty Akia. Poisonous plant used to catch fish; bright orange gold berries used in making leis. The scientific name is Montekoala. Akia is scattered here and there right next to the road, on both sides, hundreds. At Manavainui and Lualailua there are some. There's lots of species, about 15 or 20. That's a species found in Awahi and comes from St. Johns. Mauka of the road, that one is indigenous. The endemic one, those only found in Hawai'i, are most important. Alahe'e, there are many around the road from Lualailua running toward Hana. Mauka of the road, mainly. There's one or two scattered ones between Manowainui and the Church. Aumaumau, a ferns. The only place is on Lualailua Hills. Alani is way up mauka. Auwahi has many rare trees. Alena is a medicinal plant that grows on the beach at Kanaio Beach. Ahuhu, Awapuhi are in the area. Aweoweo is up at Auwahi, a very rare vine. One is named for Forbes in 1920, found on this side of Lualailua hills. One is in Kanaio. The Hawaiian name is Awikiwiki. There's a second one called Cantavelia Haleakelentis--found on the backside of Haleakala. One Forbesiai plant is at the East end toward Kanaio, but they think it's extinct. it is in the opposite end of the Awahi forest. Forbes found it one at the Kaupo end.

A rare sage is at Lualilua Hills, it will be in the updated endangered list. The Mehami, one to three at the most, are next to Lualilua Hills. Makaloa, Ma'ipilo, a rare tree is all along the beach at Kanaio. A little bush about 3-4 feet high. Naio is sandalwood, all along the beach. Nehe is there on the Kanaio Beach. Kanaio is most untouched, a very big area. There is a rare Portulaca at the bottom. Ihi is the Hawaiian name. Lute is not found on the beach...it's endemic one....Halapepe - there's hundreds in Auwahi forest, next to Lualailua. The regular Hau is found in La Perouse Bay. Ho'olei is a rare tree. Awahi, only few trees left. I have 70 seeds, ripe. I planted them all. Hunakai we planted this. Pornetunatum is a red flower 1,900 feet, parallel with the hill, Iliahi is the rare one. The rare, red one is found on this side of Maui. Ilima is on the beach, whole stretch, a rare one. Kahuna noi is called Kauna'oa, right next to the road here, under the power line. Kuskuta is a parasitic plant. Kau'una'oa is makai and mauka of Lualilua Hills. It feeds off other plants. The mountain one isn't orange. The best way to tell the piii is the flower, it's pointed and twisted. It doesn't open up, it lays like that. This crawling one is a different variety. Most of them are upright. This colony is found here. Some creeping ones are in Kahoolawe. That's pili. There was a sedge called Ahu awa, they used it to strain the awa. Mome Mahi pilo grows here. Ahuawa is here.

SOUTH MAUI DISTRICT
COMPILATION OF INFORMATION

HONOLUA`ULA LAND SECTION

Natural Features

Volcanic Cones

Several volcanic cones or hills are in the area. They represent the powerful activity of Goddess of the volcano, their caves are the dwelling places of mythical beings, or are used as burial. On top of some of them there are observation and religious sites. The *pu`u* are also important landmarks for locating fishing grounds at sea:

- Kaumahina over 1,000 years old.
- Keonehunehune (land may be impoverished but always will persist if treated well and loved.
- Ke`eke`ehia Hill (follow the pathway of life and entrust to a fair judgment at death).

- Pu`u `Io
- Pu`u Kalualapa
- Pu`u Kanahau
- Pu`u Kanaloa, the god of healing, a chief of long ago.
- Pu`u Keonehuna, is about 700 year old.
- Pu`u Lalani was made by Pele.
- Pu`u Lua Palani 300 years old.
- Pu`u Mahoe
- Pu`u Makua is about 600 year old.
- Pu`u Naio about 300 years old.
- Pu`u o Kali
- Pu`u Ola`i
- Pu`u Pimoe 200 years old, where Pele went inland to sleep. A burial place.
- P`u Ka`eo

(Ashdown, 1969-1977)

Fishing, Fishponds, and Fishing Grounds

The area is plentiful of near shore fishing, sharks and mermaids dwell in caves, there are good fishing trails, fishponds, and there are ko`a to mark good fishing grounds:

- The *Ahole* fish had to do with magic, such as *Hāna aloha* (love work), or causing people to love each other.
- The *Kumu* fish frequent the sacred *loko* (fishponds) at Keone`ō`io.
- The *A`u* (Swordfish) the `*Ahi* (Tuna), the *ulua* and its young *papio* (Jackfish family) are closely associated with the Kingdom of Maui.

- The Mākena Bay which should be called Keawala`i, the Calm Harbor, is a fine fishing place. Ku-Mākena, like Ku-He`eia, is a place where fish run in schools *ke-he`e*, or *ke-hei*.
- The Mermaid favorite haunts is Keone`ōi`o and the sacred fishponds there on Lae Kina`u.
- Ku-Mākena and `Āhihi bays, each had a fishpond. Keone`ōi`o had a huge one. Here the *`Ama`ama, Awa*, and *`Oi`o* are found in large numbers. At certain times the spirits of the dead chiefs are heard, and often seen, at certain places. This procession is called as *`oi`o* or as ***huaka`i-po***, the Marches of the Night. The two main ponds are named Halua and Kauhioaiakini and here dwell the mermaids and the benign sharks, such as Kamo`oali`i and Kaneikokala, their spirit mates of the sea.
- Hāna-huapala is a shark who can come ashore as a handsome man. He lives in the Ana Mano or Shark cave beneath Pu`u Ola`i. One of the spirits in the area is Inaina and her sweetheart was `Ilolo. Her form is a certain white eel with yellow spots. This white eel has also the name of Puhi Kina`u on Lae Kina`u. This was in 1100`s or the era when Kauholanuimahu dwelt in Honua`ula with his mother, La`akapu.
- Kaneikokala is a benign shark or ***`aumakua*** as also Wewehe, his sister Mermaid, who frequent Wailea.
- Pahua are the fishing grounds out in the sea at Kanaio. Its upper markers are Laeloa and Holu point. Puwai cave is the lower mark.
- Hui is a fishing ground and on the seaward side is the islet Molokini, which is the first landmark. The other mark is red hill, Pu`u Okali which appears to be the point on the Western side of Molokini. That would be Lae Lalelale, while the opposite point is of the islet of Kahaki.
- The two *ko`a* at Kanahena show the good fishing grounds of Molokini and toward Canapé Bay of Kaho`olawe.
- The Ko`a atop Pu`u Ola`i for Maka Kilo i`a and its mates along the coastline indicates fishing areas between Maui, Molokini, and Kaho`olawe.
- Keahua is a fishing ground. Nihomole sands are the upper mark lined up with Pahe`e-o-Lono at East Molokini. Pohaku-olo near to Kauke Point at Kohe-o-Hala, the blowhole is the lower mark.
- Kalawa is a fishing ground. Nihomole sands lined up with Pahe`e-o-Lono at East Molokini is the upper mark. Kalawa point, Kala hills and Kaule are the lower mark.
- Pohaku1ula is a fishing ground. The stone by that name is the upper mark with Molokini and Pahe`e-o-Lono. Kala Hills and Kaule Point is the lower mark.
- At the base of Pu`u Ola`i on the land side there are two ponds. One is a salt pond, or ***makapa pipi***, where *pa`akai* (salt) was gathered. The *pa`akai* of this pond was valuable because it contained *lepo alae* (the ocherous red earth full of iron).
- Two fishing grounds are at Kanaio and Papaka-kai.

(Ashdown, 1969-1977; HENI 199-200)

Caves

Sea caves are the dwelling places of sea gods and guardian spirits. Dry caves are family burial places, underground sheltered trails, ancient hiding places in case of war, or meeting pleaces. The following caves (*ana*) are noted in the area:

- Ke Ana Mano, the shark cave, is under Pu`u Ola`i in Keawala`i in Makena, where the guardian spirit shark dwells.
- One Cave is under Lae Mahuna where the guardian spirit shark dwells.
- Kalua `Opala is below Pu`u Naio in the `Ili of Kalihi, *mauka* of Keone`o`io.
- Kalua Papaka is in upper Kanaio, Papaka area. Once one could reach `Ahihi Bay from here.
- Ke-ana-wa`a burial cave is below Kanaio; it is a canoe cave.
- Alala-keiki is the Weeping Child cave where children and older people were hidden when the Maui defenders met in canoes in the channel, between Maui and Kaho`olawe the invading army from the Hawai`i. (Ashdown, 1969-1977)
- Ala-lo`ihi is a lava tube below Pamano at Kanaio which was used as a school to teach students fishing, planting etc. in early 1900. The teacher at this school in the cave was Kauwa and Sam Po briefly attended this school as a child, but was expelled for not following its strict rules. This cave connects at Ala-lo`ihi with Ala-poepoe cave where the bodies of those fallen in battle where thrown in the old days. (Po in EPS, 1968:13)

Winds, Rains, and Springs

The followings are winds, streams and springs are known in the area:

- Kowelo`e`a, dust streamers blowing from Kaho`olawe
- Ualanipili rain makes cloudburst in Honua`ula
- Ualanipili rain of Ulupalakua
- Naulu is a sudden shower
- Papa is a wind associated with Honua`ula (Pukui & Elbert, 1986: 316).
- Poiki is the black dog of Pele associated with Wai-a-ka-`Ilio Springs.

Other Features

Temples and Other Structures

In the area there are many *heiau* and little altars of stones where people prayed to Lono and to Hina for rain and ample crops. Other temple include many fishing shrines (*ko`a*), a hula platform (*halau*) and a place of refuge (*pu`uhonua*), etc.:

- Pohakunahaha Heiau is a small well preserved walled structure at Makena.
- The *heiau* called Onipa`a or Onepa`a provided King Kamehameha V and Queen Liliu`okalani with the motto "Firmly Established." It is located upon land presently owned by Seibu Corp., *mauka* of the Pu`u Ola`i Gate by Ulupalakua Ranch. The other part of the *heiau* called Oniuli or Oneuli, or Oneuliuli, is on Sam Garcia's land, Makena side. It was a school for *kahuna* (priests). There was the *halau* where students of *hula* performed for the *ali`i* and *ali`i-nui* during the *ho`ao* marriage ceremony and during the *makahiki* (new year), when games where enjoyed there.
- Heiau Papakea a large shrine to Ku`ula-kai and other fishing deities stood at Pu`u Ola`i in Makena .
- Oneuliuli and Onepa`a Heiau at Makena and the fishponds Maonakala village were sacred to Queen La`akapu and her son, Kauholanuimahu.

- Ko`a and shrine on top of Pu`u Ola`i.
- Kalani Heiau is a large temple on David Chang`s property in Makena .
- Popoki Heiau is nearby: the cemetery of Kukahiko family.
- Heiau at Luala`ilua looking North.
- Ko`ula Heiau in a good size high platform in Kanahena
- The Heiau Ko`ula at Kanahena was said to be a *ho`oulu`ai*, or place where offerings were placed while prayers were said for blessing of plentiful food.
- Below to the Northward is a large *ko`a* by the sea said to be a place for deification of souls of beloved dead. The corpse would be wrapped in a covering with a family pattern on it. and the body was placed in the sea. When a shark having similar marking to the cloth pattern appeared, the people knew that the dead one`s soul would be a sharkbody `aumakua or guardian spirit who would help family members at sea.
- Heiau at Kalihi near Keone`o`io.
- Kauholamahu, son of Kahoukapu and La`akapu of the Maui *ali`i* with the Burning *Kapu* of the Sun, came to Honua`ula from Hawai`i. He built the Oneuli Heiau *mauka* of Keawalai Church in Makena and his sacred fishpond at Keone`o`io.
- One of the larger *heiau* structures is at Make`e near Ulupalakua Ranch, where children were taught the arts of good living and industry, until King Kalani`opu`u invaded the area from Hawai`i.
- Pu`u Naio Heiau is at Papakuka or upper Papaka above Keone`o`io, the sand or land of the ghost of a departed chief and his companions; it is located above La Perouse Bay.
- There is one *pa heiau* and *kahua* (an arena or a slide) and the Nahawale village sites and the water spring called Waipe`epoli.
- There is a fishing shrine, sacred *ko`a*, at Keone`o`io, known today as La Perouse Bay, and the four sacred pools above the undersea cave, near Pu`u Kanaloa. Kamohoali`i, shark brother of Pele and *`aumakua* of the Yoshikawa and Po families used to be fed here.
- Papa Pueo, the Owl Flat by Pu`u Ke`eke`ehia held the Hale Pueo, now Mausoleum Hill. The Hale Pueo was a place to pray for enlightenment and for the souls of the dead. Ke`eke`ehia was the *pu`uhonua*, or place of refuge for this area of Honua`ula. The Pueo-kahi and Pueo-nui-akea are two names for the *akua*, or God. Pueo is symbolic of Wisdom and the whole universe, light and enlightenment. It is an *`aumakua* or ancestral guardian spirit (Ashdown).
- Nahaleloulua Kane Heiau was dedicated to Kane and built in remote antiquity.
- Kaaiea Heiau was built in remote antiquity to multiplying and producing food.
- Pa`alua Heiau is a good sized L shaped enclosure in Kalihi. Pa`alua Heiau is in the land division, or `Ili of Kalihi in Honua`ula, above La Perouse Bay. It was for rain. Below was a *ko`a* or Maka-kilo-i`a, or both.
- Kaulena is the name of the *ko`a* near Keone`o`io
- Heiau near the shore at Keawanaku in Kaloi. Probably a *ku`ula*.
- Kahemanini Heiau was built in remote antiquity to multiplying fish
- Kuahuka is a small *heiau* at Kaunukeaha in Kanaio at 2700 feet.
- Kohala Heiau is a rough platform South of the Kula Pipe in Kanaio.
- Manonokohala Heiau is a platform at Puki in Kanaio East of the Honua`ula Congregational Church.
- Manoka`ahia Heiau is at Puki, West of the Church at Kanaio.
- Papanuiokane Heiau at Hulapapa is above the upper Kanaio Trail.
- Heiau at Ki`ipuna, Ninaulua Nui in Kanaio is *makai* of the trail between Wai-a-`ilio and Wahene. It is a large platform. (Ashdown, 1969-1977)

Ancient Villages and Sites

There are a number of Hawaiian villages from `Ulupalakua to Kanaio:

- At the Nahawali village there was a tapa making platform, a temple and the *halau* for canoe finishing and launching. The cold water well there is called Waipe`epoli.
- The Nahawale village and the sacred coconut grove is nearby Pu`u Ola`i.
- Maonakala village was near Keone`o`io, now La Perouse Bay.
- Waile`a village was to the North.
- Kanaio village had *pili* or *pili* -grass thatched homes still in 1925. It was partially destroyed by the 1736 lava flow at the time of the birth of Kamehameha. The village once went down to Na`upaka beach by Pu`u Ola`i and was called there Nahawale Village. There are Hawaiians living in Kanaio now and more Hawaiians plan to settle there on family lands.

Legendary and Historical Figures and Events

- There is a East Maui version of the birth of Maui, finding of fire, fishing up the islands, and snaring the sun. It involves places in Hana, Kipahulu, Pimoe and Haleakala. (Beckwith, 1940: 229-330)
- Aiai, son of Kuulakai, the fishing god, travelled about the island establishing ko`a (fishing stations) at ko`a aina (fishing grounds) and setting up kuula (altars). Many of them are at Honua`ula. (Beckwith, 1940: 18)
- Kalani`opu third invasion of Maui took place at Honua`ula. He ravaged it from Keone`o`io to Makena. (Walker, 1931:28)
- Kanaloa could not make his figures of the first man and woman come to life using the Honua`ula earth, while Kane was able to do so.
- La`akapu of Honua`ula married Kahoukapu chief of Hawai`i in the 12th century A.D. She gave her Houa`ula land to his beloved son who ruled from Makena to Nu`u. He built the temple in Makena.
- Honua`ula was the residence of Quuen Kalola, a daughter of King Kekakulike, who ruled Muai until 1736. She was the last Ali`i to prounounce the kapu of the burning sun.
- In Honua`ula, King Kahekili gave permission to a chief named Ku-keawe to run pigs in the uplands. See `Olelo No`eau # 88 for the proverb derived from this story.

(Asdown, 1969-1977)

- The Chief Aikanaka (Man-eater) was born in the Hana district died at Honua`ula. He was a good man. His wife is Hina (fed on the Moon), who escaped on the moon because her children made too much escrement, which was difficult to dispose of it according to the kapu. There are various versions of this legend including some from the South Pacific. (Beckwith, 1940: 242-243)

Chants and Songs

Honua`ula, pitted back,
Hills of Doubly peaceful
A greeting

For my famous land.
For scaling squid suction cups,
Gusty mists.
The rain hiding [behind] stone walls,
Distinguished by tapoo fish,
Famous stones,
Auwahi hot in the sun.
O Bays of Pi`ilani
In the Valley shade.
O rain that stings the skin
And the rain and Kili`o`opu wind.
You block Ka`uiki,
Streams mingling with seas
In the Lowlying rain
And windward cliffs.

(David Kapohakimohewa in Pukui, Helbert and Mookini, 1974: 276-277)

Hawaiian Proverbs

`Ōlelo No`eau # 88: *`Ai pua`a a Kukeawe.* The pork eating of Kukeawe. Said of a person who is not satisfiued with the number of his own pigs and so he robs his neighbors of their. (See the story of Kekeawe).

`Ōlelo No`eau # 1058 *Honua`ula, e pāluku `ia ana na kihi po`ohiwi e na `ale o ka Moa`e.* Honua`ula whose shoulders are pummelled by the Moa` wind. Honua`ula is a windy place.

`Ōlelo No`eau # 1059: *Honua`ula kua la`ola`o.* Callous -backed Honua`ula. Said of the people of Honua`ula, who were hard workers and carried loads on their back.

`Ōlelo No`eau # 1579 *Ka ua Lanipa`ina o `Ulupalakua.* The sky-crackling rain of `Ulupalakua.

`Ōlelo No`eau # 2094: *Makali`i puaināwele ke kai o Keone`ōio.* The sea of Keone`ō`io is dim and distant. Said of one who fees himself too good for his associates.

`Ōlelo No`eau # 1817: *Kohu `ole kāhi wai o Kanaio.* Unattractive is the water of Kanaio. A contemptuous expression meaning that another person has said or done something worthless.

Table 10. Place Names Honua`ula: Red Land, Sacred Land

Land Section or Place Name	Translation	Ahupua`a
`Ahihi	Metrosideros bush sp.	Honua`ula
Auwahi	Smokey Glow	Honua`ula
Ka`akaulua	The Double North or The Double Right	Honua`ula
Kaeo	Winner	Honua`ula
Kalihi		Honua`ula
Kaloi	Taro Patch	Honua`ula
Kanahena	His Nakedness	Honua`ula
Kanaio	Bastard Sandalwood Tree	Honua`ula
Kaunuahaue	Temple of Haue	Honua`ula
Keauhou	New Era or Current	Honua`ula
Keone`ō`io	The Oio Fish Sand	Honua`ula
Kualapa	Ridge [of Sweet Potatoe Garden]	Honua`ula
Hapapa	Rock Stratum	Honua`ula
Maluaka	Quiet or Shaded Reflection?	Honua`ula
Meoloa	Long Strip	Honua`ula
Mokopilo	Filthy Moko Bird	Honua`ula
Mo`oiki	Small Lizard or Ridge?	Honua`ula
Mo`oloa	Long Ridge of Lizard?	Honua`ula
Mo`omuku	Cut off Land	Honua`ula
Onau	Choppy	Honua`ula
Paeahu	Several Colletions of Things	Honua`ula
Palauea	To Misreprese..t One Bowed Down	Honua`ula
Papaka	Shelf for Bailers	Honua`ula
Papa`anui	Great Papa`a	Honua`ula
Pimoe	Unkind Protection (Elevation)	Honua`ula
Pu`u o Kanaloa	Hill of Kanaloa (Elevation)	Honua`ula
Pu`u o Uli	Uli's Hill (Elevation)	Hanua`ula
Pu`u oe	Unkind Protection (Elevation)	Honua`ula
Pu`u Olai	Earthquake Hill (Elevation)	Honua`ula
Ulupalakua	Ripe BreadFruit Ridge (Village)	Honua`ula
Waipao	Water Obtained by Digging	Honua`ula

(Walker, 1931: 27-36; Pukui, Elbert, Mookini, 1974; Pukui, Elbert, 1986)

KAHIKINUI LAND SECTION

Natural Features

Fishing, Fishponds, and Fishing Grounds

The ocean along the shoreline has abundant marine life and is a source of sustenance for many people. The fresh water seeping into the ocean at the shoreline produces a large array of sea life. The gods Kane and Kanaloa went about the islands to establish springs of fresh water, and to keep them clear for drinking and for the chiefs. These gods open the fishpond Kanaloa at Luala`ilua (Beckwith, 1970: 64). The first *akua* made the a fishpond for spawning fish, at Luala`ilua-kai into which flowed the Waiokou stream from Kaupō side where the ignorant priest Koino was destroyed because he desecrated the pure waters and had bad manners.

- In the Kahikinui side there are deep-sea fishing landmarks. One in Honua`ula was covered by lava.
- The Ahupua`a of A`uahi (not Auwahi as it is spelled now), means the white swirling smoky mist of lava flows. The Ahu (mound) of Aiea was *mauka* of Luala`ilua where the boundary crossed the old *alaloa* (road). .
- Fishing grounds were marked by *ko`a* and shrines to Ku`ula-kai, deity of fishermen.
- Kiele fishing ground is at Luala`ilua. Kalenawai is a landmark. Koukouai at Kipahulu and Ka-lae-o-ka-`ilio at Kaupō are the upper landmarks. Wa`a-ke`kua spring on the beach and a little hill beyond is the lower landmark.
- Palua`a fishing ground. Kalena and Ka-lae-o-ka-`ilio is the upper mark. The cave Puhimake and a hill is the lower mark Sterling provides detailed topographic descriptions on how to locate the fishing grounds.
- Ko`ahau fishing ground. Keone`o`io Hill and Pu`u Ola`i is the upper mark. Kaka hill on Kaho`olawe and Pahe`e-o-Lono on Molokini is the lower mark.
- NaiaaKamahalu fishing ground. Hoaka upland on Kaho`olawe and Cape Kealaikahiki is the upper mark. Keone`o`io Hill and Pu`u Ola`i is the lower mark.
- Nai`a-a-kamali`i fishing ground. The cave on Makena and Paopoa at Pu`u Ola`i is the upper mark. The cave at Paliku in Keone`o`io with the two stones at Mokuha and Kanahena is the lower mark.
- The beautiful fishing trails in Kahikinui are called maka`ala or makala. Some are at Anamauloa area of Auahi-kai.

(Ashdown 1969- 1977; Sterling HEN Vol. I: 199)

- Make salt at Waia`ilio (Marciel, J. Audio Tape 87.5)
- Spring at Waia`ilio (Marciel, J. Audio Tape 87.5)

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Caves

Kahikinui contains many underground lava tubes, or caves. Many lava tubes were used as pathways, as shelters, as pathways, as burial places, *awaloa*, places where bones of chiefs are hidden; and *ana pe`e kaua*, war hiding caves". Many caves near the shore are in continuous use in Kahikinui.

- Many large caves near Hānamauuloa village at the shore below Luala`ilua Hills were used for shelter in ancient times and now by fishermen.

- Many small caves at Kamoamoa used as shelter or storage places, and at the shore there is a large cave with sign of ancient occupation and current use by hunters and fishermen. (Walker 1931: 88)

Burials in inaccessible sea cliffs were described to Walker in the 1930s.

Winds, Rains, and Springs

The Wai-a-`Ilio fresh water spring, is located near the Uliuli village. This is the spring named in the legend of the of the old woman and the little dog previously mentioned. (Walker, 1931: 90)

In one or two places along the Kahikinui shore, small rivulets had been dammed to impound some of the water which came down with the freshets. (Walker, 1931: 67)

Other Features

Temples and Other Structures

In Kahikinui there are *heiau* and many little altars built of stone where people prayed to Lono and to Hina for rain and ample crops. Many of these remain.

- Kahuahakamoa is a *heiau*. *Kahua* is course, or arena; *hakamoa* is a type of wrestling without the use of the hands. In another version Hakamoa is the constellation of "Chicken Roost." This *heiau* was just *makai* of Luala`ilua. Another theory was that it was a temple for Kilo (star gazer) to study the heavens. Other say that it is the temple where the mango trees stand. Ashdown thinks that it is associated with Moa`ula on Kaho`olawe since the latter also was a place for Kilo Hoke or the *kahuna* of astronomy and navigation. Kuamoanaha taught on `Aina Kanaloa (now Kaho`olawe) and that isle is associated with the two Kanaloa on Maui at Keone`o`io and Auahi at the coast (present point of division between Makawao and Hāna district in Honua`ula. Kahuahalāmoa Heiau is a walled enclosure of large size and here ceremonies of marriage etc. were held. Nearby was the arena where wrestling and other games for the Makahiki were enjoyed by the populace. This temple was also for planting ceremonies on the Night of Hua. *Makai*, down the slope of Luala`ilua was the He`e Holua or the largest *holua* slide, and above it was another temple. The *kahua* or track for playing the game with the *`ulu* stone or game of *`ulu maika* is mentioned in the Ashdown`s notes for this area.
- The Heiau Make`e Kanawai, law abiding and zealous, is located in lower Auahi, Kahikinui side.
- Unnamed *heiau* is West of Luala`ilua Hills near the beach trail at Auwahi.
- The *heiau* at Koholuapapa is located North-West of Luala`ilua Hills. It is a large walled structure.
- Puoho-ka-Moa Heiau is near Saint Ynez Church. It means blaze up, to lift up or to bloom and *ka* meaning the, and *Moa* the Cock of dawn. Or *puoho*, to be awaked by the god, sun. Here boxing and wresting games were held and warriors were

"fighting cocks". The place apparently was dedicated to Lonomakaihe as the god of warriors. It was bulldozed.

- Hakalauai heiau was a temple for multiplying plant food in the Lapueo ahupua`a. Uluao Keakakilohi was the chief who built it and Mana was the priest.
- Kaooa was the ancient *heiau* for human sacrifices in the Alena Ahupua`a.
- Momoku was the *heiau* at Luala`ilua Ahupua`a built by the Menehune at Kapapaiki.
- From above the present road and down to the beach are trails *ala hele* or paved trails to fishing grounds. or *kai lawai`a* and several *ko`a* for Ku`ula to indicate the deep fishing grounds.
- There are petroglyphs are in Kahikinui at Pahihi Gulch.
- Rock circles of possible astronomical use similar to those on Kaho`olawe are located near Science City at the crater summit and below Luala`ilua Hill in Kahikinui (Ashdown 1969-1977; Hms K8, Oct.13, 1885 HEN: 374).

Ancient Villages and Sites

The villages, whose ruins are now easily seen, date back to the time of Pi`ilani in the 1500s. The Kahikinui villages were quite numerous and indicated extensive population where now none live. Walker estimated a population of 1500 or 1800 based on a count of sites in the South Coast of Kahikinui. Burial platforms of rough stone are common features of the villages along the shore including individual and family burial. (Walker 1931: 66, 67, 68, 86) The entire Kahikinui region is dotted with structures, house foundations, stone walls, animal pens and so on. The population count inclusive of the mauka villages would be then higher than quoted:

- Make`e is the site of a larger village with 11 large dwelling sites and one *heiau*.
- Above and below Pu`u Luala`ilua stood a huge village which was destroyed in part before Pele left Maui for Hawai`i.
- The largest village Hānamauuloa is the one situated below Luala`ilua Hills near Kiakeana Point. It contains 80 sites.
- Wai-a-`Ilio is the village at the foot trail at Luala`ilua with 27 sites of which 15 house sites, pens, canoe-sheds, and other enclosures. A stone house with grass roof still in place in the 1930s. Other villages are near the *heiau* sites.
- West of Waiailio there are 5 house sites.
- North of Luala`ilua Hills near the trail is a small villages with 5 houses and a small *heiau*.
- Between Hānamauuloa and Alena there are 30 sites.
- Between Kipapa and Alena there are 30 sites scattered in the *`a`ā* lava flow. A possible small *heiau* and *ko`a* are there.
- At Papaula there are 14 sites on the ridge.
- At Waiapea there are 10 sites on the extensive *`a`a* lava flow.
- The Kahikinui village, like all those situated from Ulupalakua and Makena to Nu`u and Wai`u on the present road to Kaupō, thrived. It is located at Nakahohu.
- West of Nakahaka is the village of Ka-Lae-o-Ka-Pulou with 18 sites of which 11 are house sites. It also includes a *heiau* and *ko`a* shrine.
- Old villages with 36 sites of which 17 house sites are along the shore in the Nakahaka region.
- The Uliuli village is located near Kahawaipapa Point. 21 sites include 11 house sites.and a well built *ko`a*. (It is also the site of the old windmill).

- Kamoamoa is a village with 20 sites, with a large *heiau*, a possible *kahuna* house, and 8 house sites.
- At Kalaniana in Mahamenui, just below Palaha Gulch on the shore trail, is an ancient village of 21 sites with fishing shelters, 15 house sites, a *heiau*, a possible *ko`a* shrine, pens and burial platforms.
- At the mouth of Manawainui Gulch is located a fishing village with two large sites, several small shelter sites, a canoe-shed, a large *ko`a*, and a burial platform.

(Walker, 1931: 66,67, 68, 86..:297)

Legendary and Historical Figures and Events

- Moikeha of Tahiti - Named Kahikinui or Great Tahiti in honor of his homeland. (Marciel, J. Audio Tape 87.5)
- Moikeha, son of Mulieleali`i, son of Maweke of Tahiti. Moikeha retire to Kahiki (Beckwith 1940: 352-353)
- La`a settles at Kahikinui on Maui but, finding its too windy, moves to Kaho`olawe, whence sails back to Kahiki. La`amaikahiki introduces image worship and he is most famous as the bringer of the kaeke drum and the hulka dance to Hawai`i. (Beckwith 1940: 358-359)
- Tahitinui, a grandchild of Ki, from Tahiti, lands at Kaho'olawe and settles East Maui, hence the name Kahikinui for a district on Maui. Thus the descendants of Ki and Hawai'iloa people the whole group. (Beckwith 1940: 363-366) The name of Hawai'iloa is associated with sites at Kahikinui.
- Makali'i (the Eye of the chief) is the navigator of Hawai'iloa. During the Makahiki ceremony the scattering of edible plants, to decide the food supply for the coming year, is done using the net of Makali'i. His knowledge of the stars, made him the regulator of successful planti..g seasons. (Beckwith 1940: 367)
- Anianikalani is the father of Hawai'iloa, the ancestors of the Hawaiian peoples. Places in Kahikinui are reported to be associated with Anianikalani.

Chants and Songs

There is a mele hoipoipo (love song) about Kahikinui for the Hula Ka`eke`eke, or the hula for the kneeling position, celebrating a woman lover looking from Kahikinui on Maui across the channel to Kona on the Big island, which represents her beloved:

Kahikinui, land of wind driven smoke!
Mine eyes gaze with longing on Kona;
A firewreath glows aback of the district,
And a robe of wonderful green
Lies the sea that has aproned my loins
Off the point of Hānamaolo`
A dark burnished form is Hawai`i,
To one who stands on the mount
A hamper swung down from heaven,
A beautiful carved shape is the islands
Thy mountains, thy splendor of herbage:
Maunakea and Loa stand (in glory) apart.
To him who looks from Mailehahei;
And Kilohana pillows for rest
On the shoulder of Hu`ehu`e. (Emerson, 1965: 124-125.)

Recently a Hula Halau enacted *hula* dances using the Kahikinui Chant and have been filmed by an European video crew on site at Kanaio.

Hawaiian Proverbs

`Ōlelo No`eau # 88: *`Ai pua`a a Kukeawe.* The pork eating of Kukeawe. Said of a person who is not satisfiued with the number of his own pigs and so he robs his neighbors of their. (See the story of Kekeawe).

`Ōlelo No`eau # 2866: *Uliuli kai pali o Kahikinui. kokolo mai ka `ohu he `ino.* Dark are the sea cliffs of Kahikinui: when the mist creep, it is a sign of a storm. Trouble is approaching, from the legend of Pāmano who saw his own dead approaching.

Table 11. Place Names - Kahikinui: Great Tahiti

Land Section or Place Name	Translation	Ahupua`a
Alena	Boerhaavia repens weed?	Kahikinui
Auwahi	Smoldering Fire	Kahikinui
Huakini		Kahikinui
Kahaleaimakani	The Windy House	Kahikinui
Kahalulu	Peaceful Place?	Kahikinui
Kahawaihapapa	Shallow Aqueduct	Kahikinui
Kaipapa	Shoal (Section)?	Kahikinui
Kaipapa	Shoal Reef	Kahikinui
Kamoie	The Main Root	Kahikinui
Kamuku	Cut Short	Kahikinui
Kā	To Overthrow	Kahikinui
Kepuni		Kahikinui
Kolanai		Kahikinui
Lanipo	Darkened Heavens	Kahikinui
Louluape	Fan Palm Plant	Kahikinui
Luala`ilua	Two Fold Tranquillity (Hills)	Kahikinui
Mahamenui	Large Mehame Tree	Kahikinui
Makamoku	District Observer	Kahikinui
Makee		Kahikinui
Mamuku	Cut Short	Kahikinui
Manawainui	Large Water Branch	Kahikinui
Manukani	Bird Sound?	Kahikinui
Naioli`ili`i	Small bastard Sandalwood	Kahikinui
Nakaohu	Trembling Mist	Kahikinui
Naka`aha	Quivering Prayer?	Kahikinui
Nakukuikea	White Kukui Tree	Kahikinui
Nakula	Uplands	Kahikinui
Navini?		Kahikinui
Ninialii	Balm of Ali`i	Kahikinui
Pakowai		Kahikinui
Pohaku Eaea	Spray Rock (Point)	Kahikinui
Polala	Warming Night	Kahikinui
Polo`ai	To Summon	Kahikinui
Popoo		Kahikinui
Pukai	Parading Trumpet	Kahikinui
Pu`u Pane	Answering Hill?	Kahikinui
Wailaulau	Very Many Waters?	Kahikinui
Waiopai	Trembling Water	Kahikinui

(Walker, 1931: 27-36; Pukui, Elbert & Mookini, 1974; Pukui, Elbert, 1986)

KAUPŌ LAND SECTION

Natural Features

Fishing, Fishing Grounds

- There is a deep sea at Kaupō and no fishing grounds (Sterling, 1966: 3/ 3.13)
- Paiena Fishing Grounds. "Waiopai is the fishing ground, extending from the hollow where the breadfruit trees grow at pu`u Kaaahuahu down to the point at Kalaniwahine. That is the ground. It is 120 fathoms deep" (Hms. K. 8. HEN Vol. 1 :405 in Sterling, 1966: 8/9.7)
- Manowaiopae - about 50 feet from thre shore and the canoe landing is a small pool for Opae (Manupau 1992-1993: 17).
- People of Kaupō gathered Hihiwai, `Opihi, and Sea urchins (Ha`ue`ue) (Marciel, J. Audio Tape 87.5)
- "All take a turn at fishing at times and the toothsome aweoweo is so abundant hereabouts that it helps out the commissary problem materially during the moonlight season."

(Hawaiian Gazette September 6, 1910: 6: and Pacific .Commercial .Advertiser, September 5 1910: 6 and September 9 1910:6 in McGregor Dec. 1989: 366-367).

- Nu`u Bay with its beach was a traditional landing places for Hawaiian fishing canoes and a fishing village. It was also a recent landing for shipping cattle by the ranch. In 1922 Manupau and Emory noted:

> "When we came to level land, that was Nu`u proper. It is a seaport and cattle are shipped from here. This was a landing place for fishermen in the olden days and even down to the present. There are about five houses at Nu`u and the inhabitants are all Hawaiians" (Kuoko`a Newspaper June 20, 1922).

- Nu`u is a sea port and cattle are shipped from here. This was also a landing place for fishermen. (Manupau 1992-1993: 15).
- Salt gathering pond at Nu`u by the beach (Malo`o?? in Marciel, J. Audio Tape 87.5)
- The chief lived here at Nu`u so that he could fish and so he made the path from the canoe landing to his house. (Manupau, 1992-1993: 24)
- Fishing ko`a at Nu`u - on West side of canoe landing close to a rocky base (Manupau, 1992-1993: 23)
- Fishing and `Opihi gathering at Nu`u. (Marciel, J. Audio Tape 87.5)
- Loko i`a (Fish pond) called Malo`o - this fish pond had akule, opelu, ahole. Mrs. Marciel remembers cleaning it with her father. (Marciel, J. Audio Tape 87.5)

Caves

- There are several caves in Kaupō. Alala-keiki is a burial cave at Nu`u which was still in use when was partially destroyed by road builders, as were the beautiful petroglyphs in them. During the raid of Kalani`opu`u the Maui men could hear the weeping of old folks, women and children from the cave of Nu`u. By the time they came back from the battle their people had died in the cave and that it is how it first became a burial cave.
- The heiau at Nu`u has petroglyphs as well as the cave wall at Nu`u (Manupau, 1992-1993: 23)

Winds, Rains, and Springs

The forces of nature were as much part of the community as the people. The winds and rains are prominent features and an integral part of the lives of the residents. The Hawaiians of the district have observed set patterns in the wind and the rain as it moves across the land and the ocean. By observing changing patterns in the weather, the Hawaiians were able to adjust their activities to accomplish what was appropriate to the conditions. Because of their dependence upon the land and ocean for survival, knowledge about the winds, rains, the habitats and the life cycles of marine animals and birds, and the mythical origins of Hāna's rich resources enable them to live simple yet comfortable lives (McGregor, Dec. 1989: 385).

The famous winds of Kaupō include:

Kualau or Kuakualau - is the strong wind and the rain out in the ocean. In Kona this wind brings in the ohua like fish along the beaches. It is customary for it to blow in the evening and in the morning but it also blows at other times - "Where are you, O Kualau, Your rain goes about at sea."

Moa`e - This is a customary wind. It blows strongly but pleasantly from the sea and sometimes from the land. It is sung about, thus: `Where are you, O moa`e wind? You're taking my love with you."

Moa`eku - This is a customary wind like moa`e but much stronger. This wind was said to have been born in Hāna, grew up in Kipahulu, attained maturity at Kaupō, became aged in Kahikinui, grew feeble at Kanaio, rested and let its burden down at Honua`ula. Here is a song for .his wind: "Where are you. O Moa`eku/You make much work on a stormy day".

Kupele - This wind comes with the rain. It is strong and blows out to sea from the lands.

Kaomi - It was strong, blustering wind whose strength does not last long but blew like a gentle pressure. It is sung of thus: "The wind blows in a gale, Then it gently presses."

Naulu - This wind goes with the Naulu clouds. The Naulu is the wind, It bears the Naulu clouds along.

Kiu - It is a wind that flies along and seems to sneak by the mountain of Haleakala. It is called the Kiu of Haleakala. Here is a song of this wind: "The Kiu is the wind that lives on the mountain."

Makani ka`ili aloha o Kipahulu - The love-snatching wind of Kipahulu is the usual Kipahulu wind. It blows down the mountain and goes out to sea (Kuokoa Newspaper June 15, 1922).

Ka ua pe`e pa pohaku - The rain that makes you hide behind rocks. (Marciel, J. Audiotape 87.5)

Other Features

Temples and Other Structures

Many large and small temples, some of them very ancient are reported in the area including:

- Loaloa was a very ancient *heiau*, it was built by the Menehune and not by the chiefs in the Manawainui ahupua`a. It belonged to the ancient gods. It is longest on Maui. Kukui tre from Lanikaula on Molokai was planted at this temple in Kaupo. (Marciel, J. Audio Tape 87.5)
- The Loaloa Heiau on Kaupō Ranch, is thought to have been rededicated by King Kekaulike about 1730.
- There are 7 *heiau* sites in the Nu`u region: unknown name near site 9, *heiau* at Anakalehua, Halekou, a large *heiau* at Ka`ili`ili. Site 160, at Ka`ili`ili, Papakea Heiau near the salt pond. Oheonenui near Halekou, and unknowns Northwest of Halekou.
- Pili-o-Kane was the ancient *heiau* where human sacrifices were offered in the Nu`u Ahupua`a.
- Papa`akea was the ancient *heiau* for the multiplication of food crops in the Nu`u Ahupua`a. A burial platform nearby may have contained the remains of the *kahu* (keeper) of the temple.
- The most interesting *ko`a* or fishing shrine at Nu`u is close by a high rock ledge on which petroglyphs can be seen. The road has damaged them.
- The Heiau Ohelo at Nu`u stands near the two caves of Alalakeiki.
- Ukulaelae was the ancient *heiau* for the multiplication of fish in the Nu`u Ahupua`a.
- There are 2 *heiau* in the Pu`u Maneoneo region: A *heiau* at Opihi above Pu`u Maneoneo, and another *heiau* above the hill of Keanawai.
- Near the village of Kou there is a very large *heiau*; another *heiau* at Kou is on the ridge at Pu`u Maneoneo
- Popoiwi was the *heiau* built by the Menehune in remote times in the Popoiwi Ahupua`a. Popoiwi is not the real name of the heiau, it is knwon as Keakalauai (Name given by Josua Ahili`i) Popoiwi is the name of the area. (Manupau, 1992-1993: 6)
- Hale-o-Kane was the *heiau* were human sacrifices were offered in the Kumunui Ahupua`a. Nakuli was the chief of Kaupō in very ancient times. This *heiau* belonged to him. After his death Kaiuli became chief of Kaupō. Near Marciel House (Marciel, J. Audio Tape 87.5)
- Lonoaea Heiau is located near Hale-o-Kane.
- Hala was the *heiau* for the multiplication of the food crops in Kakio Ahupua`a. Chief Kaiuli owned it and Hala was the *kahuna* who dedicated it.
- Pu`ulakua was the *heiau* for human sacrifices in Maipalaha. Chief Kekaulike lived there and the *heiau* belonged to him. His royal son Kakaalaneo of Lahaina of the high lineage of Kaalaneo was born there, the chief Kamehameha. The mother was Kekui (Kekuiapoiwa). Mother and father were *kapu* chiefs. (Marciel, J. Audio Tape 87.5)
- A *ko`a* shrine is located between Ka-Lae-o-Ka-`Ilio and Kamanawa Points in Naholoku. The last *kahu* of the place was Mikikolo Ahuli`i who used the structure until the year 1924.
- Lanikaula (?) Heiau is located just beyond the Kaupō Post Office.

- Pu`umakaa Heiau is located *mauka* of the school-house in the Kumunui region in Kaupō.
- A small *heiau* at Kaumakalua above the road.
- The *heiau* at Puhilele is at Kepio on top of a hill. Another *heiau* is near the shore.
- Pua`akolo is a small *heiau* near the beginning of the upper trail to Nu`u in Naholoku.
- Laia? is a small *heiau* on the Pu`u-o-Kaupō hill near the Catholic Church between the road and Kamanawa Point in the Pu`u-o-aiai region.
- Pu`uakua is a small *heiau* near the trail leading down to Nu`u road at 850-foot elevation.
- Waihi Heiau at is at 1200 feet elevation south of the upper Nu`u trail.
- Halileo was the *heiau* were human sacrifices were offered in the Kalepa Ahupua`a.
- Petroglyphs at Nu`u are on Waiopai side of Nu`u (Marciel, J. Audio Tape 87.5)

(Haw`n Eth. Notes Aug. 12, 1885:3/404; Walker 1931, 102,127, 215)

Ancient Villages and Sites

- Along the shore from Ka-Lae-o-Ka-`Ilio (the cape of the dog) to Moku-lau (many islets) are the ruins of many house sites, large and small. The old school house was located also at Moku-lau. Stone with petroglyphs are at Nu`u, Wai`u Bay, Kaupō, and also at Kipahulu and Hāna.

- "Along the trail leading to Keoneoio from Kaupō are several large rocks encircled with low platforms and pebbles and bit of coral. These are the tombs of certain chiefs who fell during one of the numerous fights that occurred between rading parties from West to Kaupō region. Less pretentious graves in the vicinity were those of common fighting men. Fiftyseven of those graves were seen at one place in the midst of a rough broken lava flow. Due to insufficient protection from the weather most of the bones have long since mouldered into dust". (Walker :71 in Sterling, 1966, 9.7: 4).

Food

- People of Kaupō ate sea cucumbers (Manupau, 1992-1993: 176; Pukui, Olelo No`eau #1635)
- People cultivated sweet potato, onion and maise. (Sterling, 1966 :3.13)
- Where villages of Kaupō district are located and how to identify agricultural areas (Walker, in Sterling, 1966: 9.7)
- "Kaupō has been fampus for its sweet potato, both in ancient times and recent years. Sweet potatos can be cultivated from sea level to about 2000 feet in the rich pulverized lava of the district" (Handy, :161.)
- The people of Kaupō used to catch u`au birds in Haleakala. (Manupau, 1992-1993: 23d)
- Kaupō known for two types of taro that makes white poi, called papapueo & haoku. (Marciel, J. Audio Tape 87.5)
- People of Kaupō and also planted Ipu (gourd) and Pumkin. (Marciel, J. Audio Tape: 87.5)
- Palaha wale - place to go pick the best kukui, the kukui was sent to Honolulu. Marciel, J. Audio Tape: 87.5)

- "Excellent oranges and limes are grown at Kaupō, the former being sweet and finely flavored"..."The Kaupō people suffer in another way by lack of a regular steamer services"
- People of Nu`u plant Sweet potato, Ipu, and Pumpikin (Marciel, J. Audio Tape: 87.5)
- Planting enclosure at Nu`u (Marciel, J. Audio Tape: 87.5)

(Hawaiian Gazette September 6, 1910: 6: and Pacific Commercial Advertiser, September 5 1910: 6 and September 9 1910:6 in McGregor Dec. 1989: 366-367).

Cultural Practices

- The wiliwili is plentiful at Nu`u (Marciel, J. Audio Tape 87.5)
- People of Kaupō and Nu`u are known for their wowen hats made from Nanaku (sedge) and Iwa. These were best known on Maui. (Marciel, J. Audio Tape 87.5)
- The yellow wiliwili is indigenous to the area of Kaupo. The wiliwili wood was formerly used for canoe outriggers. The wiliwili was planted for posts. When the wiliwili blooms stay out of the water because the sharks are mating and they will attack. (Marciel, J. Audio Tape 87.5)

In 1922, Manapau and Emory describe the fine setting of Kaupō:

> "Kaupō is indeed a green land and so is Hāna. They look so open and pleasant to live in because the wind is always blowing. The coast is good to look at and fine for inshore fishing. The whole of Kaupō faces West Hawai`i. Looking upward one sees the majestic Haleakala mountain, the Kaupō Gap and many small waterfalls (Kuoko`a Newspaper June 1, 1922).

Legendary and Historical Figures and Events

- Pamano is the demigod of Kaupō. (Manupau 1992-1993: 5)
- The legend of Laiekawai is associated with Kaupō. (Manupau 1992-1993: 30)
- Kane and Kanaloa made Waiu pond in Pu`u, The version Hina and Ku made the pond. (Manupau 1992-1993: 24).
- Chief Kalaniopu`u and his warriors camped at Mokulau and slaughtered the people of Kaupō. Kamehameha and Kekuhaupi`o were the famous warriors of Kalaniopu`u at this battle. (Manupau 1992-1993: 6)
- The pool of Kapunahoa - Pamano swam and bathered here (Manupau, 1992-1993: 6)
- Paukela was a chiefess of Kaupō in the legend of the high chiefs of Maui (Sterling, 1966: 9.7)
- Chief of Kaupō is Kahekahiali`i (Manupau, 1992-1993: 1)
- Kauakahiakua, Chief of Kaupō (Pukui, Olelo No`eau #1635)
- Keli`imaika`i Kamehameha`s younger brother was kind to the people of Kaupo, in gratitude they hid him when he was sought to be killed. (Marciel, J. Audio Tape 87.5)
- Chief Kekaulike lived in Kaupo, his son is Kakaakaneo of Lahaina. (Marciel, J. Audio Tape 87.5)

- Queen Kapi`olani owned land where Nu`u wharf is today. (Moses Manu in Sterling 9.7 also found in Ka loea Kalaiaina 9/9/1899, HEN Vol. 11:942)
- Nu`u means the high place, or second platform in a temple, is a place of sacredness and is a village site. It is so named because it was the landing place of Nu`u, a great kahuna, navigator and ancestor twelve generations from the beginning of the race on the genealogy of Kumuhonua. (Beckwith, 1970:314)
- Keli`iahonui, younger brother of Kaleimoku chief of Lahaina was the one who built the ala stone to Nu`u.

Chants and Songs

Kaupō `aina pali huki i luna
Huki a`ela e like me Kahikinui
He nui nō wau nāu, e ke aloha
(For. Sel. in Pukui, Elbert, Mookini, 275 274-275)

Kaupō land of cliffs rising high,
Rising upward like Great Tahiti,
Great was I, you [thought], O love.

Hawaian Proverbs

`Ōlelo No`eau # 460: *Hāna, mai Ko`oolau a Kaupō.* The extent of the district of Hāna, Maui.

`Ōlelo No`eau # 1259: *Ipu pa`u lena i ka uahi.* Soot containers yellowed by smoke. A term of contempt applied to the *kauwā* at Kaupō.

`Ōlelo No`eau # 1595: *Ka ua pe`e pōhaku o Kaupō.* The rain of Kaupō that makes one hide behind a rock.. It falls so suddenly that one flees behind rocks for shelter.

`Ōlelo No`eau # 1635: *Kaupō `ai loli.* Kauakahiaka, a chief of Kaupō, is said to have been fond of the loli and to have once built a large imu for rosting them. Since that time the people of Kaupō have a reputation for being especially found of this sea creature.

`Ōlelo No`eau # 1897: *Ku ke `ā ka hale o Kaupō.* The lava is heaped at the house of Kaupō. A saying denoting great distress from the legend of Pāmano.

`Ōlelo No`eau # 2519: *`Ōnea Kaupō, ua kā ka`ai i ka lua.* Barren is Kaupō; the eating in the cavern has begun. Fatal shark attacks were common at one time at Kaupō. As a result, the people moved elsewhere, after which a man-eating shark peered at Kaupō and said these words at the place called Ki`ei (peer), later used to mean destitution.

Table 12. Place Names - Kaupō: Landing [of Canoe] at Night

Land Section or Place Name	Translation	Ahupua`a
Akaakua	Path of the Gods	Kaupō
Apole	A Division	Kaupō
Haalelehinale	Forsaken Moving Flow	Kaupō
Haleniki	Tied House	Kaupō
Hiki`aupea	Coming Travelling by Sea Sailing?	Kaupō
Hualele	Flying Seed	Kaupō
Huilua	Two Companies	Kaupō
Kaakua	Path of the Gods	Kaupō
Kahaupono	Strength ? Ground	Kaupō
Kahuai	The Oven Opening	Kaupō
Kaki`o	Itch	Kaupō
Kalaeoaihe	The Split Spear Cape	Kaupō
Kalepa	To Strike Flag or Trading?	Kaupō
Kamanamana	The Seat of Thought (medicinal plant)	Kaupō
Kanehoa	Kane`s Friend	Kaupō
Kaniaula	Ringing in the Ears	Kaupō
Kaopala	Rubbish	Kaupō
Kaulanamoa	Chiken Fame	Kaupō
Kaumahalua	Double Weight	Kaupō
Keahaupono	Straight Raising Ground	Kaupō
Keahualoa	Long Pile of Stones	Kaupō
Kepio	The Captive	Kaupō
Kipaha	Pavement	Kaupō
Kou	Tree?	Kaupō
Kuiahe	Interrupted Prayer Penality	Kaupō
Kukoae	Lodge	Kaupō
Kukuioolu	Lamp of Olu	Kaupō
Kumunui	Great Foundation	Kaupō
Lamanui	Great Torch	Kaupō
Lole	Cloth	Kaupō
Lualele	Flying Seed	Kaupō
Makaakini	Many Bright Eyes	Kaupō
Mamalu	Shade or Screen	Kaupō
Ma`alo	To Pass By	Kaupō
Miana	Working Urine, place for urinating	Kaupō
Mokuia	Cut or Divided	Kaupō
Mokulau	Leafy District (Many Islands)	Kaupo
Naholuku	Garments	Kaupō
Nakula	Uplands	Kaupō
Naniumalu	Shady Coconut Trees	Kaupō
Nau	Craig niche	Kaupō
Niniao	Pouring Cloud	Kaupō
Nu`u	High Place: Craig Niche	Kaupō

Opupao`o	Collecting of Pao`o Fish	Kaupō
Paina	Eating	Kaupō
Pauku	Piece?	Kaupō
Poe	Round	Kaupō
Poho`ula	Red Hollow	Kaupō
Popoiwi	Come	Kaupō
Pukaauhuhu	Fish Poison Outlet	Kaupō
Puka`auhuhu	Fish Poisoning Outlet. Plant Hole	Kaupō
Puulani	Heavenly Hill	Kaupō
Puumaneoneo	Hill of Sea Grass	Kaupō
Pu`u Lakua	Incongrous Hill	Kaupō
Pu`u Lani	Sky Hill	Kaupō
Pu`u Mane`one`o	Hill of Sea Grass	Kaupō
Pu`u O`Maiai	Hill of Maiai	Kaupō
Waiopai	Shrimp Water	Kaupō
Waiopuii	Water of Darkness	Kaupō
Waipuie	Temple for Purification	Kaupō
Waipuii	Water of Darkness	Kaupō

(Walker. 1931: 27-36; Pukui. Elbert & Mookini. 1974; Pukui & Elbert, 1986)

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