

PART 2: INVENTORY AND ANALYSIS

2.1 INTRODUCTION

The Northwest Hawaii Plan, with its strong emphasis on open space and natural resources, is a larger-scale regional plan rather than a community development plan (CDP) in the traditional sense of the term.

The CDP documents developed for the County of Hawaii at various times during the past twenty years -- including the Hilo CDP, the North Kona CDP, the Kohala CDP, the North Kohala CDP and, most recently, the draft Puna CDP -- typically provide a more or less comprehensive inventory and analysis, together with some recommendations, on the entire range of planning and development topics that are addressed in the County General Plan. Thus, for example, the Kohala CDP, which was published in 1976 but never officially adopted by the County, had a total of fifteen chapters: Introduction, Economic, Population and Employment, Land Use, Housing, Transportation, Facilities, Recreation, Historical Sites, Public Utilities, Flood Control and Drainage, Environmental Quality, Natural Resources and Shoreline, Natural Beauty and Form, and CIP Implementation. This kind of CDP seeks to provide a comprehensive portrait of the given region, and a complete set of policy, planning, and program guidelines for future community growth and development.

It should be clearly understood that the Northwest Hawaii Plan was not intended to be a comprehensive CDP that addressed all of these planning and development elements in detail. Rather, the Northwest Hawaii Plan scope of work focused on four major elements of the planning equation:

1. Regional Growth Trends
2. Open Space Planning
3. Future Land Use
4. Future Infrastructure Systems

Part 2 of this report thus provides research details on these four major planning components. Part 2 is organized as follows:

- HISTORICAL OVERVIEW
- NATURAL RESOURCES AND LAND USE
- OPEN SPACE CONCEPTS
- REGIONAL GROWTH ANALYSIS
- INFRASTRUCTURE SYSTEMS

In each of these sections of Part 2, the relevant goals, policies and standards from the County General Plan have been quoted in order to provide an overall planning and policy context. A note on this material from the General Plan: we have been somewhat selective in our quoting. For any given planning subject, we have quoted the entire set of goals as stated in the General Plan, but we have been selective in quoting from the policies and standards, emphasizing those policies and standards that are most pertinent to the focus of this Plan, and omitting others that may be less pertinent. The omission of any goals, policies, or standards is not intended to be a comment on any of the material in the General Plan. However, in the interests of an efficient report, we have been selective as noted above.

2.2 HISTORICAL OVERVIEW

2.2.1 INTRODUCTION

Nani Ka Waiho a Kohala i ka la'i

Beautiful lies Kohala in the calm

The northwestern tip of the Island of Hawai'i, Upolu Point, lies within the Kohala District as it juts out into the Alenuihaha Channel. To the south, along Hawai'i's western coast, lies the district of Kona and to the east the rough coast of the Hamakua District. Throughout history Kohala was an important seat of power on the island long before Europeans arrived at the end of the 18th century. It was from this district that Kamehameha the Great gradually extended his power to embrace the whole of the island, eventually gaining the suzerainty over all the Hawaiian Islands.

The mountainous remains of the Kohala Dome, at an elevation of 5,505' form the rugged central area of the Kohala District. The oldest of the islands volcanos, the Kohala Dome is now regarded as extinct. The high table land between the Kohala Mountains and the vast northern slopes of *Mauna Kea* is known as Waimea and has one of the finest and most lush mountain climates in the Hawaiian Islands.

Before western discovery evidence indicates the area was well populated and agriculturally abundant, historically Kohala has offered excellent grazing for cattle and during the 19th century it became the center of the Parker Ranch, one of the largest ranches in the world. During this same period *Kohala* became a leader in island sugarcane production with at least five sugar mills in operation by the turn of the twentieth century. Throughout history, Kohala has remained a rural and agricultural district.

2.2.2 ANCIENT HISTORY: 1200 A.D. - WESTERN CONTACT: 1778

Ka Po'e (The People)

The first peoples to populate the Hawaiian Islands are thought to have arrived about one thousand years ago. These "discoverers" were probably the *menehune* of Hawaiian legend, who were driven out or conquered and later absorbed by invading Polynesians two centuries later. It is this later group of Polynesians that are the ancestors of modern Hawaiians. Convincing evidence shows that over a period of about two centuries, some six or eight hundred years ago, the route between Tahiti and Hawai'i was well known and was used by numerous voyagers. The last Polynesian immigration to Hawai'i occurred during this period;

in which important new cultural elements were introduced. The leaders of these later immigrants were the ancestors of the historical *ali'i* (chiefly class) of the Hawaiian islands. At the end of this period of the "long voyages" communication ceased between Hawai'i and central Polynesia, and Hawaiians lived in nearly complete isolation from the rest of the world until the year 1778.

The indigenous people of Hawai'i lived in communal self sufficiency for hundreds of years before the coming of westerners. Land, the life of their culture, was not privately owned but was considered the domain of the Gods. Land divisions or *ahupua'a* ran from the mountain to the sea, and commoners were entitled to use the resources within the *ahupua'a* for food, clothing and shelter. Western concepts of private property were incomprehensible to the communal conservation ethic of early Hawaiians. Commoner people did not make use of the land cost free however, taxes in the form of produce, fish, feathers, dogs, *tapa* cloth and pigs were collected on a yearly basis during the *Makahiki* season by regional chiefs.

Unlike the serfs of European feudalism, Hawaiians were not tied to the land, and people could move freely from place to place, subject to the taxes of individual chiefs.

Ancient Hawaiians in North Kohala

The leeward coast of Kohala was an area of intensive, pre-contact Hawaiian activity, with dense residential and agricultural utilization, and at least two major temples. Although the earliest chronometric date for human occupation is A.D. 1300 (at *Koai'e*), legends and traditional history make reference to the leeward coast in earlier times.

The most famous of these accounts relates to the *heiau* of *Mo'okini*. It was said to have been constructed by the foreign priest, *Pa'ao*. Dated by genealogies, this took place sometime in the 11th or 12th century A.D. *Pa'ao* is thought to have instituted new religious practices among early Hawaiians, including human sacrifice, a new temple form, exemplified by *Mo'okini Heiau*, and a new line of chiefs. Whether real or symbolic *Pa'ao's* role in the history of Hawai'i represents a period of dramatic cultural change. Dr. Dwight Baldwin, an English missionary, visited the *heiau* in 1832 and at that time he was told *Mo'okini* was:

The most famous temple on this island, perhaps on all the islands, for human sacrifices. When (Dr. Baldwin) asked how many human victims were offered there, the reply was: *Na lau, na lau, na lau* etc...There were four hundred and 400 and 400 etc...

Other traditions indicate that North Kohala was often the scene of warfare between chiefs of the island of Hawai'i and those of Maui. Apparently, the leeward coast was being used as a staging area for an attack on Maui on the night that Kamehameha I was born.

Birth of Kamehameha the Great

Several places are *pointed* out as the birth place of Kamehameha the Great. Hawaiian historians John Papa I'i and S. M. *Kamakau* say it was at Kanakai, Kokoiki or Little Blood, in North Kohala, where the chiefs of his father's army camped. The year of his birth is not known; but it is thought to have been about 1758.

Kamehameha was born to Kekuiapoiwa, an *ali'i* of the of Mahi line of Kohala. His father was a young chief named Keoua, half brother to the islands ruling chief, Kalaniopu'u. It is likely that after being bathed in sea water, the new chief was carried up the sloping field to where the twenty foot stone walls of *Mo'okini Heiau* loomed over the landscape. Within the walls of the *heiau* the *kahuna* or priest would then send prayers to the gods of heaven and gods of earth. To the god images of the temple, pig, coconuts, and *tapa malo* were offered asking for a long and full life for the child as the navel cord was cut.

There is a memorial located at the site today and among the stones inside the enclosed walls is the "birthing stone" of Kamehameha the Great. *Mo'okini Heiau* remains standing today high above the view plain and has been preserved by the State of Hawai'i and descendants of the Mo'okini family.

Until the age of five years Kamehameha was brought up at Halawa, a region of North Kohala. It was this same region that Kamehameha returned to as a young man with his wife Kalola and his brother Kulaimamahu, along with the war god *Kukai'ilimoku*. The village of Halawa was located on the *pali* between Hapu'u and Kapania Bay. It was at a meeting house in *Halawa* that the great warrior Kekuhaupio brought the news of *Kalaniop'u's* death in 1782 and urged Kamehameha to march against his cousin Kiwalao to contest the kingdom.

The Waimea Plateau

"Waimea is like a spear rubbed by the wind, as the cold spray is" blown by the *Kipu'upu'u* rain." (Proverb from a Kamehameha mele)

The region known as the Waimea plateau begins on the Southern slopes of the Kohala Mountains. It is bounded on the east by the thick forest of the Hamakua District, on the South by the mountains of *Mauna Kea* and *Hualalai* and on the west by the sea. At an

elevation of 2,500' above sea level the sweeping plain stretches ten to twenty miles from east to west and four to nine miles from north to south.

The first records of this area indicate that *koa* and sandalwood forests covered much of the plains. From the warm coast and beaches on the western boundaries of the Waimea plains, early Polynesians, gradually pushed up onto the cooler plateau, making seasonal use of the plains. As the years passed descendants of these early Polynesian explorers established fishing villages on the leeward coast of Kohala and Kona along the western extremities of the plains and began cultivating primitive *taro* patches along a series of streams at the Southern base of the Kohala Mountains (the present day site of Waimea agriculture and truck farms).

Settlements did develop around these limited watered areas of the cool uplands and the plateau became one of the most populated regions of the island. The water shed area of Waimea supported over 10,000 people before the arrival of Westerners and later became the center from which Kamehameha the Great conducted his campaign to unify the islands. The area is also famous as a battleground in the legends and songs of the people. Today the names of many ranch places are derived from those days, and many of the present Parker Ranch cowboys are descendent of the ancient Polynesian warriors.

Kekaha & Na Ali'i (The Chiefs)

Kekaha, or barren land parched by the sun, lays between the *ahupua'a* of Kealakehe in North Kona and *Anaeho'omalu* in South Kohala. Also known as *Kekaha-wai-'ole*, or, desolate land with out water, Kekaha receives an average yearly rainfall of only 25-30 inches. The coastal areas of Kekaha, Kiholo, Ka'upulehu and Mahai'ula and Makalawena were well populated before European arrival with extensive trail systems connecting the coastal fishing villages with the agricultural uplands of Pu'uwa'awa'a and Pu'uanahulu. Remnants of these trails can still be seen today.

Kekaha was a region valued by ruling chiefs, inhabited by attendant chiefs, and upon occasion abused by warring chiefs. The land was also strongly influenced by the kahuna class of Kauahi and Nahulu. During the reign of the chief, Lonoikamakahiki, A.D. 1565-1595, Kekaha was the object of scrutiny, as Kamalalawalu, ruling chief of Maui prepared to invade Hawai'i.

During the reign of Alapa'inui, 1720-1754, Kekaulike of *Maui* made war against Hawai'i and cut down...

the trees throughout the land of Kona (and) abused the country people of Kekaha", (and at) Kawaihae he cut down all the coconut trees.

These acts of war were of great consequence for "*to fell trees of such usefulness (to the ancients) was considered truly inhuman.*"

2.2.3 EUROPEAN CONTACT: 1778 - DEATH OF KAMEHAMEHA I: 1819

North Kohala

Approximately twenty years after Kamehameha's birth, the Western world made contact with the Hawaiian islands, and dramatic changes began to take place. Many of these changes were rapid and, for this reason, it is often difficult to separate pre-Contact from post-Contact aspects of life in the sources of information which are available, e.g. written accounts and the archaeological remains.

Captain James Cook sailed and traded along the western coast of North Kohala past the village of Kukuipahu late in 1778. He bought pigs and other produce with pieces of iron and iron hoops. Samuel Kamakau described the scene like this:

The whole population of Kohala men and women and children, the aged the feeble, flocked to the cliff-side along the coast; the place was covered with them.

The Hawaiians were practicing a wide range of agricultural techniques in Kohala at the time of Western contact. They were producing *taro* and sweet potato in large impressive fields along with yam, gourd, sugarcane, banana, coconut, pandanus and *ti*. The wet-*taro* valley of Pololu on the northeastern coast ranked first in that section, having a flatland area, about one mile long and about a third of a mile at its widest point. This area was at one time completely covered in terraces except for the section immediately inland from the seashore which was under very high sand dunes. Another portion in the lower valley on the west side was made up of fishponds and swamps.

Lieutenant King, who sailed with Captain James Cook made these observations of the Kohala uplands in 1778:

The country as far as the eye could reach, seemed fruitful and well inhabited...three or four miles inland, plantations of taro and potatoes and wauke neatly set out in rows. The walls that separate them are made of loose burnt stone which are got in clearing the ground, and being entirely concealed by sugarcane planted close on each side, make the most beautiful fences that can be conceived.

These field systems were marked by rock alignments and walls which ran parallel to the natural contours and perpendicular to the prevailing downslope winds. Agricultural terraces, or *lo'i*, were constructed in the many gulches of Kohala and were irrigated by an intricate system of channels. English missionary William Ellis described these gulches and *lo'i* in 1823:

"Streams of water were frequent, and a large quantity of ground was cultivated on their banks and in the vicinity."

Remnants of these irrigation channels and *lo'i* can still be seen throughout the gulches of North Kohala today.

South Kohala/Waimea

At the time of Cook's arrival the arid lands of South Kohala supported many small fishing villages. The coast from *Upolu* point toward *Kawaihae* was heavily populated evidenced by the many archaeological sites in the area today. Lapakahi State Park is an example of the type of fishing village common along the coast. Hawaiians harvested an abundance of fish and made salt as their main enterprises, trading with those of the uplands for *taro*, sweet potato and other agricultural produce.

It was during the 1780's that Kamehameha I struggled to bring the islands under his rule and the Kawaihae area played an important role in this conquest. *Pu'ukohola Heiau* (hill of the whale) was built in 1790-91 high on a hill overlooking Kawaihae Bay. Dedicated to Kamehameha's war god, *Kuka'ilimoku*, *Pu'ukohola* is of the *po'okanaka* class of *heiau* which requires human sacrifice. When the temple was in use from 1791 to 1819, there were thatched houses and an altar for the ruling chief and his priests. It was in 1791 at *Pu'ukohola Heiau* that Kamehameha sacrificed his cousin Keoua Ku'ahu'ula and proclaimed himself chief of the entire island of Hawai'i. *Haleokapuni Heiau*, which stands in line with *Pu'ukohola* and perhaps a hundred feet off shore, is also the site of *Haleokapuni Heiau*. This *heiau* is said to have been used by Kamehameha as for the feeding of sharks."

Kamehameha was aided in his conquest of the islands by western technology and military strategy. John Young, the English military advisor to Kamehameha during this period, built his household complex *Pahukanilua*, overlooking Kawaihae Bay. Although Young traveled throughout the islands to serve Kamehameha he maintained a permanent home at *Kawaihae*. When the French Captain, Louis De Freycinet, went ashore at Kawaihae in 1819, he described the Englishman's house:

The house of this interesting old man (John Young) was located at the top of a small hill that over-looks the village of *Kohaihai* (Kawaihae). It was built of stone and was well ventilated and sanitary.

Today the ruins of this homestead lie within the Pu'ukohola National Historic Site.

North and South Kohala along with Waimea eventually became one of the most important regions in the islands. When Kamehameha I began his campaign to unite the islands in the 1780's, he was able to draw upon the people of the Kohala district for support. When the Europeans arrived, the political structure of the region had stabilized and land tenure and economic jurisdiction were well defined.

In 1793 a simple gift of five cows and a bull to Kamehameha I by British naval officer, Captain George Vancouver would influence the Waimea and South Kohala district for years to come. A ten year *kapu* against the injury or slaughter of the animals helped to establish large herds by the turn of the 19th century.

Kekaha

The land of Kekaha, in North Kona, is characterized by the 1800-1801 and 1859 lava flows, which contribute to its desolate appearance. One of the earliest descriptions of the area, as seen through the eyes of a Westerner was written by Captain George Vancouver, who sailed past Kekaha in 1794, he wrote:

...The adjacent shores were uninteresting, being chiefly composed of volcanic matter, and producing only a few detached groves of coconut trees, with the appearance of little cultivation, and very few inhabitants.

Among the people traditionally connected with Kekaha were the famous twin brothers, Kame'eiamoku and Kamanawa of the *Nahulu* line. These cousins of Kamehameha also served as aides and counselors to Kalanipu'u, and Kiwala'o, and later supported Kamehameha in his drive to unite the islands under his rule. In 1782, Kame'eiamoku was living at Ka'upulehu and Kamanawa was in Kiholo. It was off the coast of Ka'upulehu that Kame'eiamoku and his followers gained infamy as the captor of the sloop *Fair American*. As the lone survivor of the attack, Issac Davis survived and was later employed by Kamehameha as a military strategist and helped with the use of western weapons and ships during the later decades of the 18th century.

The village of Ka'upulehu takes its name from the large ahupua'a of Ka'upulehu which extends from the sea to the summit of Hualalai. In 1800 a flow broke out high on the slopes

of the mountain near the summit of Hualalai. This flow referred to simply as the Ka'upulehu Flow ran north toward Kiholo, about half way down the slope most of the flow crossed over into the neighboring land of Pu'uwa'awa'a, but then divided about three miles from the sea and sent a western branch back to Ka'upulehu.

Mahai'ula is a beautiful white-sand beach area famous for its surf. It was just south of Mahai'ula at Ka'elehuluhulu that the great fishpond of Pa'aiea once lay. This fishpond was about three miles long and one and a half miles wide stretching past several *ahupua'a* forming an inland seaway. The pond served the mariners of Kekaha as a water-course as well. "The fishermen going to Kailua and further South, often took a short cut by taking their canoes into the pond and going across, thus saving time and the hard labor of paddling..." Early in 1801, following the Kaupulehu Flow, Hualalai erupted forming the spatter cone known as Puhia-Pele. This vent is easily seen today just *makai* of the Mamalahoa Highway near Hu'ehu'e Ranch. The lava from this flow covered the pond of Pa'aiea and formed the point of land where Keahole Airport is located today.

Where a once sizable population lived the remains of walls, terraces and stone platform sites are still evident today. The *mauka/makai* trail between Hu'ehu'e and Kuki'o still exists today over the rough lava fields. There is a water well in the area that in traditional times serviced the needs of those in the area with the most potable water on the coast.

The *mauka* portions of the of Pu'uanahulu and Pu'uwa'awa'a *ahupua'a* lie near the northern end of Kekaha. The picturesque hill at Pu'uwa'awa'a is a volcanic cone composed of trachyte pumice similar in appearance to obsidian. Today archaeologists are finding this volcanic glass on ancient Hawaiian sites throughout the state. This glass may have been used as a knife by itself or implanted into wood and used as a weapon. The bluff of Pu'uanahulu was formed by this massive trachyte flow from Pu'uwa'awa'a.

The Death of Kamehameha the Great

On May 8th 1819 Kamehameha the Great died at Kailua in the Kona District. Upon his death his heir, Liholiho, went away with his personal attendants to Kawaihae in South Kohala, where he remained until *Kailua*, "defiled by death, had been purified." Upon his return from Kohala Liholiho, now Kamehameha II, was proclaimed King and along with his father's wife Ka'ahumanu ruled over the Hawaiian Kingdom. At the end of November another historic episode took place at Kailua, the abolition of the *kapu* system. The overthrow of the old system was symbolized by the free eating or *'ai noa*, as opposed to *kapu* eating or *'ai kapu*. This first overt manifestation of this change not only allowed men and women to eat together for the first time but also allowed women to partake of foods traditionally allowed only to men such as pig and banana.

Influenced by Ka'ahumanu and his own mother Keopualani, Liholiho then issued orders to destroy the ancient *heiau* and burn the idols or *ki'i*, and this was done from one end of the kingdom to the other. The Spaniard Marin, who served on Kamehameha's court, wrote of this in his diary the first week of November 1819. Ironically at the very time that the people of Hawai'i were casting off their old religion, American missionaries were on their way to the islands intent on persuading the Hawaiian to embrace the teachings of Christianity.

2.2.4 MISSIONARY PERIOD: 1837-1865

North & South Kohala

The brig Thaddaus made landfall at Kawaihae on March 31st 1820 with the first group of American missionaries, however, the first Protestant missionary to tour Kohala was an Englishman named William Ellis who toured the entire island in 1823. He later wrote a detailed account of this early tour.

While Kohala had a history of abundance, the exploitation of the commoners for the sake of the sandalwood trade caused much hardship and famine throughout the islands and Kohala was no exception. Ellis found that while the tract they passed over in 1823 seemed populous the villages were empty of people. They later learned that the people had been sent to the mountains by the King, Kamehameha II, to cut sandalwood. At the inland village of Kapa'au the missionaries managed to collect a congregation of only 50 people to address. Later in the week at Kawaihae Ellis and his party met with:

vast multitudes of people passing through the district from Waimea with sandalwood, which had been cut in the adjacent mountains for "*Karaimoku*", by the people of Waimea, and which the people of Kohala as far as the North point, had been ordered to bring down to his stone house on the beach, for the purpose of its being shipped to Oahu. There were between two and three thousand men, carrying each from one to six pieces of sandalwood...

The chiefs became wealthy while the people's garden plots lay untended, often resulting in severe famine. The sandalwood in the Kohala mountains disappeared rapidly and within forty years from the time of contact the forests had been decimated.

American missionaries arrived on the Waimea Plateau at the end of the 1820's. New Englanders were delighted to find a spot where it was distinctly cool the year around. Here at an elevation of nearly 3,000 feet, was a place for rest and recuperation. A permanent mission house, first occupied by Dr. Dwight Baldwin, was built by Governor Kuakini in 1829.

The Reverend Lorenzo Lyons arrived at the Waimea Mission Station on the 16th of July 1832 and stayed to labor at this lonely mission station for the next fifty-four years. He translated into Hawaiian many church hymns and composed many hymns in Hawaiian as well. Lyons was lovingly known as *Makua Laiana*, Father Lyons, the lyric poet of the mountain country (*haku mele o ka 'aina mauna*). 'Imiola Church in Waimea was the first church erected by the order of the chiefs and this *pili* grass church was dedicated in 1830 by the young King Liholiho, Kamehameha II. The present church building was dedicated on July 22, 1857.

Cattle Hunting on the Waimea Plateau

It was during the 1820's that a handful of men, foreigners, began to earn their living by hunting wild cattle on the Waimea plain. These men would stay out on the plains for days at a time shooting the wild and aggressive long horned cattle with cap lock muskets. Deep pits were also dug close to watering holes and covered with leaves and debris to capture the cattle as they passed by.

The most noted of these early cattle hunters was a New Englander by the name of John Palmer Parker. He first visited the island in 1809 on a stop over to China and then in 1815 at the age of twenty-five Parker returned to the island of Hawaii. Kamehameha the Great was still holding court at Kamakahonu at Kailua Bay, the missionaries had yet to come and the traditional *kapu* systems were still in place. Sometime in 1816, having decided to remain in the islands permanently Parker married Kipikane the beautiful teenage daughter of a local chief. The young couple remained at the court of Kamehameha for the first years of their marriage.

Parker quickly earned a reputation as a skilled cattle hunter. Over the years he was involved in a variety of enterprises from supplying ships at Kaiwahaie with salted beef to managing a trading post in the Waimea area. He acquired land which his descendants added too and today, Parker Ranch is one of the largest privately owned ranches in the world.

During these early years none of the cattle hunters were successful in taming the aggressive long horned Waimea cattle. Although many tried to catch wild cattle, "*not even a young calf had been gotten ahold of.*" A growing trade with Spanish America brought Hawaiians in contact with the sophisticated cattle handling methods of Spanish Americans, Mexicans, and Chileans. In 1828 seventeen horses from San Diego landed at Kawaihaie selling from \$85.00 to \$110.00 dollars apiece and by the 1840's visitors from New England noted seeing the colorful Latin American horsemen riding on the open Waimea range. These changes in technology gave birth to a new era, giving rise to the industry of cattle ranching on the Waimea plateau.

It was also near the Waimea plains during this period that a tragedy of world wide magnitude took place. In 1834 Scottish botanist David Douglas arrived on the island to collect native botanical species. He was found dead somewhere between Waimea and the Hamakua Coast at the bottom of a cattle pit. There is speculation that he was killed and then robbed by local cattle hunters.

South Kohala Coast & Kekaha

In the first half of the 19th century, settlement along the western Kohala coast grew. There was much construction, including the enlargement of chiefs' residences and extensive wall-building to enclose houselots and gardens. This was due to a number of factors, such as maintaining the productivity of agricultural fields, the increase in use of the landing at Mahukona and to keep wild cattle from encroaching on agricultural lands. Ellis noted settlements at Awalua and Hihiu (the later may have been the village around the landing).

The village of Puako was described by American Missionary Lorenzo Lyons in 1832:

It has a small harbor in which native vessels anchor. Coconut groves give it a verdant aspect. No food grows in this place. The people make salt and catch fish. These they exchange for vegetables grown elsewhere.

Reverend William Ellis described the area of Kiholo in 1823

About four in the afternoon I landed at Kiholo, a straggling village, inhabited principally by fishermen.

Kiholo Bay later served as a shipping point for the cattle from Pu'uwa'awa'a Ranch. At one time Kiholo boasted a church, a school, and a boarding house called by some a hotel. Goats and pigs were raised in the vicinity but fishing remained the main occupation for the area throughout the 19th and early 20th centuries. Lorenzo Lyons describes the pond as he saw it in 1843:

Took the road from Kapalaoa to Kailua on foot. Passed the great fishpond at Kiholo, one of the artificial wonders of Hawaii, an immense work. A prodigious wall runs through a portion of the ocean, a channel for the water, etc. Half of Hawaii worked on it in the days of Kamehameha.

The Kiholo fishpond was nearly all destroyed by the 1859 lava flow. The remains of one of the pond's walls help form a small lagoon visible there today.

There are many brackish-water pools and ponds located inland from the shore line in Kekaha. These lowland fishponds can be found at Mahai'ula, Makalawena, Manini'owalli, Kuki'o, Ka'upulehu, Keawaiki, Kiholo, Wainanali'i, Weliweli, and Kapalaoa. The brackish water pond and sandy beach of Keawaiki form a coastal oasis surrounded by the 1859 lava flow. The little fishing village of Wainanali'i (water for the chiefs) just north of Keawaiki was not so lucky. On January 23, 1859 there was a brief summit eruption of *Mauna Loa* followed by a ten month long north flank eruption. The lava flow took about one week to reach the sea on January 31 at Wainana'li'i which was almost forty miles from the site of the eruption. Today ruins of this once picturesque village can still be seen bordering the lava flow. This great eruption of 1859 produced the largest out pouring of lava ever recorded up to that point, over 440,000,000 cubic feet. It was this flow that formed the point of land called *Lae Hou* (new point) which lies between Keawaiki and *Kiholo*.

North Kohala

With the exception of sandal wood and cattle the first fifty years of western contact left North Kohala virtually untouched. Among the first westerners to take up residence in the remote district were missionaries associated with the American Board of Commissioners for Foreign Missions based in New England. In 1837 the Reverend Issac Bliss his wife Emily Curtis Bliss, Mr. Edward Bailey and his wife Caroline Hubbard Bailey, by permission of Hawai'i Island Governor Kuakini, established the first mission station in North Kohala. They found an isolated and rugged region, rainy and windy, inhabited by some 8,000 Hawaiians.

The original area settled by the missionaries was in the upper most *mauka* region of the *ahupua'a* of 'Iole. In 1839 the station moved three miles down the mountain to a site more suitable for mission work being dryer and closer to the population center. Reverend Bliss wrote that:

The mission premises covered about eight acres from Hapahapai Gulch eastward over 'Iole ridge to Wainaia gulch running *makai* to the old trail and *mauka* to the fine *taro* patches.

This site formed the nucleus of a mission station that remained intact for well over fifty years under the leadership of Reverend Elias Bond, Father Bond as he was fondly called.

The arrival in 1841 of Reverend Elias Bond and his wife Ellen Howell Bond from Hollowell, Maine marked the beginning of a twenty-two year period of transition in North Kohala's history. During this period a new religion, a new land tenure system and a vastly changing economy would forever alter the life styles and world view of the Hawaiian population in Kohala.

Under the direction of Reverend Bond a Congregational church at Kalahikiola was established and a permanent church was erected in 1855. Among Reverend Bond's many contributions to North Kohala's Hawaiian population was a Select School for Hawaiian boys begun in the 1840's. The school was maintained for thirty-six years and prepared several hundred Hawaiian boys for higher education.

Ellen Bond also began a school which started with classes in her home during the 1840's. In 1872 the Kohala Girls School was constructed at 'Iole Mission Station and helped to educate Hawaiian girls in the District for over thirty years.

2.2.5 THE GREAT MAHELE & THE ERA OF SUGAR: 1848-1900

The mid 1800's saw a formal codification of a land tenure system based on fee simple ownership which had been developing in Hawai'i during the seventy years of Western influence. The traditional land system, which operated in a highly stratified hierarchy of chiefs and commoners, was based on a reciprocal relationship of rights and obligations. The commoners provided material resources to the chiefs; the chiefs provided leadership, law and order and a spiritual relationship with the gods.

Land was not owned in any legal sense, but revocable rights to its use were allocated and reallocated from the paramount chief down through the ranked system of lower chiefs and finally to the commoners.

When the potential for commercial and agricultural development became apparent in the 1830's and 1840's, some Western foreigners became increasingly dissatisfied and frustrated with the insecure position they held without fee simple ownership of land. Few could justify an outlay of capitol for a business venture without the security of land and water titles.

At the same time other foreigners, who were concerned about the welfare of the Hawaiian people, speculated that ownership of land would encourage natives to work harder for their own benefit rather than for an apparently uncaring landlord.

Pressures from foreigners, as well as from disaffected, western-educated Hawaiians, made the late 1840's a critical period in the politics of the land tenure system.

Through a declaration of rights, in 1839 and a constitution in 1840, it was legally established that land in Hawaii was owned by the people and chiefs in common, and that the king, as head of the nation, had only the authority of management. The Great Mahele of 1848 clearly defined the division of ownership between the king and chiefs. Laws enacted in 1850 authorized the sale of land to resident aliens and also awarded *kuleana*, (a small piece of

property) to those natives who actually occupied, cultivated, and improved traditional home sites and agricultural plots. Fee simple ownership of land in Hawai'i was a reality.

The establishment of Hawai'i's plantation system was made possible by this change in the ownership of land. However, it worked against the native population virtually dispossessing them of their traditional land base. Subsistence farming rapidly declined and the idea of the yeoman farmers never materialized for the Hawaiians.

By the 1850's cash was becoming not only increasingly common, but a necessity. In 1851, Father Bond was able to collect \$800.00 in cash for a new church, teachers were earning twenty-five cents a day and taxes were expected to be paid in cash. Experimentation in and development of diversified commercial agriculture was one means of meeting a growing demand for legal tender. The Gold Rush on the Pacific Coast made the demand for agricultural products from the islands a profitable enterprise. Lorenzo Lyons reported that Irish potatoes brought in several thousand dollars in 1855 and sweet potatoes brought \$7000 in 1859.

Sugar & the Chinese in North Kohala

The Chinese were among the earliest foreigners to arrive in North Kohala and began making sugar and molasses around 1840. An immigrant named Aiko had three buildings, a grinding house, a boiling house and one for cane trash. In 1847 when A.O. Forbes visited the area and described it as being near Reverend Bond's house at 'Iole:

The buildings are of thatch and built in native style, except the one which is used to grind cane in...It is a kind of shed with a top like that of a Chinese umbrella, and open at the sides. In this is the mill, which is made of native wood, and worked by oxen. A trough underground connects this with the boiling house, the juice extracted from the cane being conveyed by means of this trough into a vat in the boiling house. From that it is dipped into the pots and boiled till it is of proper consistency. It is then set to drain in pots, and the drainings are what we called molasses. The sugar is left in pots.

At the time of the Bonds arrival an exodus of Hawaiians from the district was already underway. With the introduction of a western cash-based market economy and a gradual shift away from the traditional subsistence farming and fishing, more and more Hawaiians were leaving the countryside for the port towns of Lahaina and Honolulu in search of cash paying jobs and western goods.

Ever concerned with the depopulation of the district Reverend Bond, with the help of Dr. James Wight, established the Kohala Sugar Co. in 1863. This was an effort to stem the flow of *kua'aina* (country people) from the rural district of Kohala to the more urbanized cities of Lahaina and Honolulu. The first plantings, less than sixty acres were put in around Bond's homestead at 'Iole that first year. Later, with the help of his friend Samuel Castle, Bond was able to acquire several hundred additional acres.

Bond thought that if he could provide an industry, and a way for native people to earn the cash that they sought in the cities that he could stem the tide of emigration. He later recalled: "It came to my mind as clear as sunshine that it must be sugarcane." Unfortunately the lure of Lahaina and Honolulu measured against the back breaking labor of the cane fields was far to great for the native population. Kohala's population continued to decline throughout the 19th and early 20th centuries to both emigration as well as western disease.

In the 28 years, between 1832 and 1860 while there were no plantations the native population decreased from 8,765 to 2,601. In the 18 years between 1860 and 1878 when the plantation was available the native population increased slightly from 2,601 to 2,792. However, by the end of the century the Hawaiian population had again decreased dramatically and by 1930 there were only 942 Hawaiians left in the district of Kohala.

For more than 100 years agricultural production in North Kohala was synonymous with the raising of sugarcane. In those early days sugar plantations and mills were operated privately. Many of the immigrant planters in the Kohala sugar industry were men in short sleeves who worked from sun-up to sun-down and often into the night, six days a week.

Until 1874 there were only two sugar plantations in the district, Kohala Sugar Company and Halawa Mill and in 1873 Robert Hind built Union Mill and Plantation and two years later Hind built Hawi Mill. At the same time Niuli'i Mill was established Star Mill was built. A year later Halawa Mill was torn down and a larger more modern mill was erected. The annual output of sugar for the district in 1873 was a few hundred tons, this output increased steadily during the next several decades.

However it wasn't until 1876 that the Reciprocity Treaty with the United States made sugar a profitable business venture for Hawaiian planters and the boom was on.

With the increase in production came an increase in the demand for labor. By 1880 Portuguese and Chinese laborers had replaced Hawaiians at Kohala Sugar Co. and later these laborers were supplanted by Japanese contract laborers.

Plantation camp houses were usually an assortment of long shacks divided into rooms ten foot square. This space would house two couples with a shared kitchen, homemade stoves were constructed of old cans, rocks and clay and dry cane was used for fuel. Camps were divided into different ethnic groups because of language barriers and also for continuity of social life. Camps were usually associated with different ethnic groups, for example, Waipuka Camp for Koreans, New Camp for Hawaiians. "Nigga Camp" was so named because five negro men originally lived there.

While conditions in the late 19th century were extremely substandard and harsh, conditions improved during the mid 20th century and tight knit communities developed out of these harsh conditions.

Other than the company store at Kohala Sugar stores or shops were non-existent in the district until 1873-74 when Mr. J. G. Tucker opened a small shop. A few years later the Kohala Mercantile Co. Ltd was incorporated by Messrs. R.R. Hind and James Hind. Later as more people came to work the sugar it was common place to see the small Chinese and plantations stores. Commodities varied from dried cod fish, the favorite staple of Portuguese laborers, to cement and lumber. Japanese needs were met through direct importation from Japan, of soy sauce, tiny dried fish, and seaweed packed in brine. Dry goods were sold exclusively by the Chinese and later Japanese stores.

Most travel in North Kohala during the mid 19th century was done by foot, and to a limited extent by horseback or ox drawn wagons. Throughout the district the roads, such that they were, were narrow uneven and rough. Gulches were crossed by the most direct route, usually involving grades of up to forty-five degrees. If the weather turned bad during an evening dance or other entertainment, guests would have no choice but to remain throughout the night.

In 1883, the transition from wagon to locomotive emerged, offering a new system of rail transportation service to sugar plantations as well as local residents in the Kohala District. The railroad owed its beginning to Samuel P. Wilder. To undertake the task of constructing the railroad, one hundred Chinese laborers were brought in. Construction began in 1881 and was completed in 1883 under the name of the Hawaiian Railroad Company. By 1899 Wilder's interest in the railroad and Mahukona were acquired by four of the sugar plantations in the district, Kohala, Union, Halawa, and Niulii mills. Once the railroad was established sugar could be sent by rail to Mahukona for shipment by steamer to Honolulu and San Francisco.

It was Robert Hind's son John of Hawi Mill and Plantation who launched the campaign to build the Kohala Ditch in 1904 in an effort to produce a secure and stable water source for

cane production. With the aid of Kohala Ditch water, sugar production increased dramatically during the following fifty years. The remains of the Hawi Mill can still be seen today in downtown Hawi, the smokestack located behind the old Kohala Sugar Co. building marks the site of the once productive mill.

Hoea Mill was built as an addition to Hawi Mill between 1902-1904. This mill was a great success and at its peak was capable of producing sixty to seventy tons of sugar in one shift. In 1909, the Hoea Mill broke a record by turning out 135 tons of sugar in forty-five hours. As with the other mills and plantations Hoea eventually merged with the ever expanding Kohala Sugar Co. in 1931.

By 1908 Kohala Sugar Co. had grown to nearly 5,000 acres and was producing 5,000 tons of sugar per year, by 1937 the company, through consolidation with other mills and plantations had expanded to 13,000 acres. By 1975 Kohala Sugar Co. had grown to slightly over 14,000 acres and produced over 44,500 tons of sugar per annum.

2.2.6 FIRST HALF OF THE 20TH CENTURY

From 1900 into the 1950's there was very little change in the use of land in the Districts of Kohala and Kona. The small coastal villages gradually disappeared as people moved North to inland *mauka* areas with the growth of cattle ranches and better roads. Restrictions imposed on coastal activities during WWII also contributed to this migration from the coast. Before, and after the war the harbors at Mahukona and Kawaihae continued to be used for shipping and coastal areas for fishing.

The area known as Makalawena at Kekaha, was the most prominent town of the area during the first decade of this century. Essentially a fishing village, it boasted a church, school, store, and at least seven or eight houses at one time, the town was destroyed in the 1946 tsunami. In the late 1800's in areas such as Kuki'o and Makalawena residents raised goats for market. Makalawena's large fishpond, Kapo'ikai, today is more often called 'Opae'ula named for the large number of tiny shrimp or 'opae found in the small pools surrounding the main pond. Kapo'ikai pond is several acres in size and is a lowland fishpond classified as pu'uone, which is created by a natural depression behind sand dunes. This fishpond is one of our islands most important water bird sanctuaries.

Pu'uwa'awa'a Ranch located in the *mauka* portion of Kekaha, was begun by Frank Spencer of Waimea during the 1880's. Spencer ran between 12,000 and 14,000 goats in the area. He later sold out to Eben Low and Robert Hind who operated as a sheep ranch starting in 1893. The ranch also cultivated peaches, potatoes and *taro*. The small village at Pu'uwa'awa'a also supported a small store. Hind bought Low out a few years later and the

ranch remained in the Hind family until 1958. During Pu'uwa'awa'a's hay-day as many as 12,000 head of cattle were raised on about 40,000 acres, (most of the land was leased from the government). The ranch used Kiholo Bay as its main port and shipped cattle by swimming them out to waiting ships until the mid 1930's. The area was very open with only palms and a few *kiawe* trees which were planted originally as cattle feed. Feral goats roamed the area and goat drives with up to 10,000 animals was not uncommon. The tsunami of 1946 covered part of the fishpond, built during the reign of Kamehameha the Great, and became landlocked until 1981 when the Hind family had it restored. In 1958 the Hinds sold Pu'uwa'awa'a Ranch to Dillingham Investment Co. and later in the mid 1970's Dillingham sold to Mr. Bohnett who owns the ranch today.

With the 1950's came the beginning of resort development. The Mauna Kea Beach Hotel built during the early 1960's was the first luxury resort on the South Kohala coast. Queen Ka'ahumanu Hwy was completed in 1974 which opened the way for further resort development. In Kohala Sugar Co. ceased operations, causing workers from North Kohala and Waimea to turn to tourist related jobs. Since this time many more resorts have been built along the coast of Kekaha greatly taxing the fragile natural resources.

The last five years have seen a dramatic increase in population in the Waimea area, changing the atmosphere from one of traditional ranching and agriculture to a bedroom community for resort development and newly arriving people from the mainland.

Kekaha remains relatively untouched with the exception of coastal areas which now play host to exclusive estates and resort development. Many of the brackish water ponds that supported the ancient Hawaiians and indigenous habitat have been altered or destroyed.