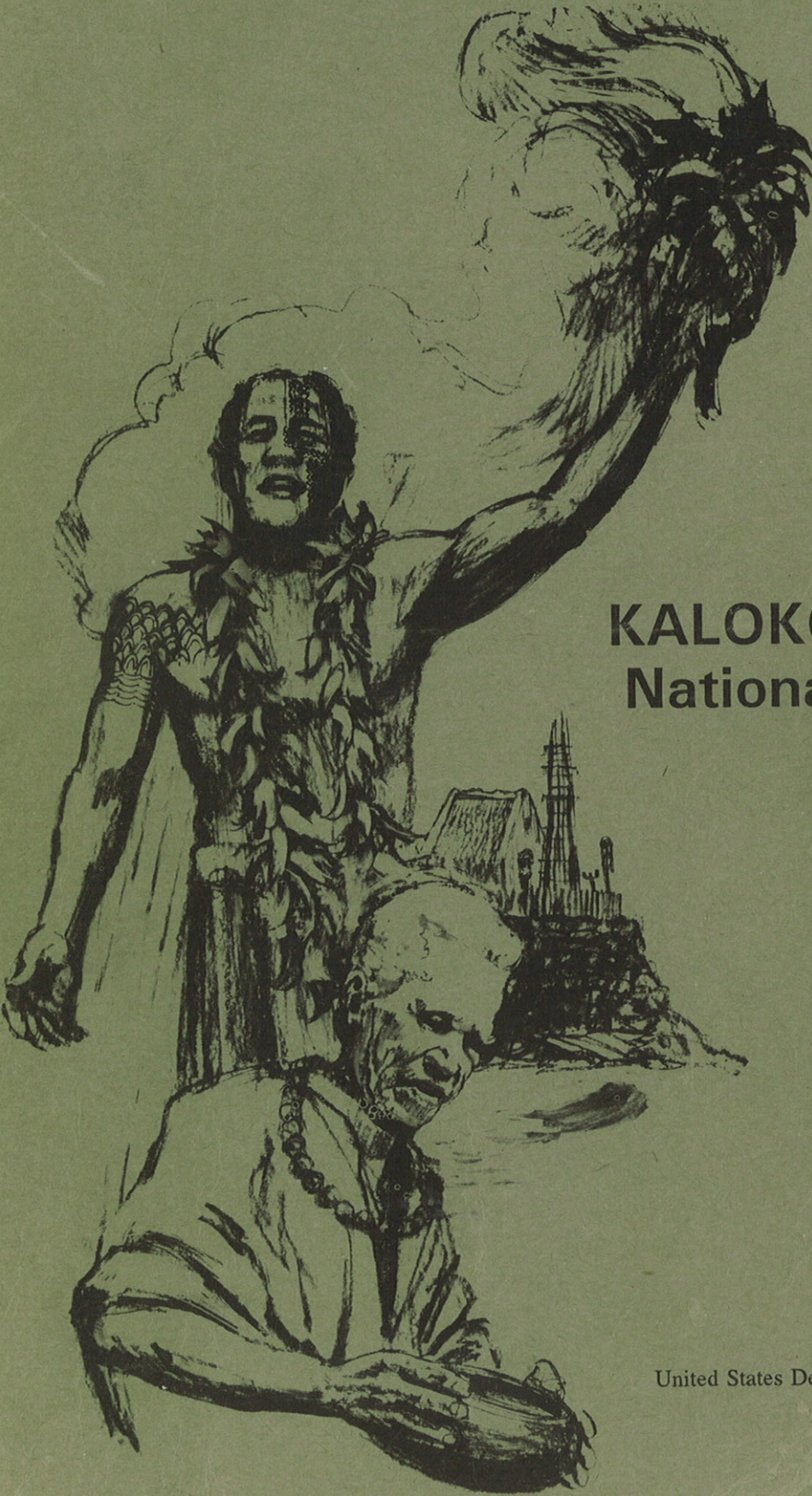


National Park Service  
Pacific Islands System Support Office  
300 Ala Moana Blvd., Box 50165  
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BARBANO

# General Management Plan/ Environmental Impact Statement



**KALOKO-HONOKŌHAU**  
National Historical Park  
Hawaii

July 1994

United States Department of the Interior/National Park Service

**Final**  
**General Management Plan**  
**Environmental Impact Statement**

**Kaloko-Honokōhau**  
**National Historical Park**  
**Hawaii County, Hawaii**

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This Final General Management Plan/Environmental Impact Statement presents a proposed action and three alternatives for the future management, development, and use of Kaloko-Honokōhau National Historical Park. The proposed action, which is the National Park Service's general management plan for the park, calls for needed facility development, the carrying out of resource management strategies to preserve and protect nationally significant cultural and natural values, and the provision of visitor services to interpret these values to the public. Through careful placement of facility development and the structuring of visitor use through the application of management zoning, the proposed action would make major portions of the park available to native Hawaiians and others who wish to pursue, in depth, activities associated with traditional Hawaiian culture. The proposed action also calls for the development of a live-in facility, in the traditional Hawaiian style, where a limited number of people can come to participate in and to recreate the old Hawaiian ways. The proposed action also calls for increases in park staffing.

Environmental consequences of the proposed action would include disruption of the park's historic scene in those places where development is to take place, and the covering over of about four acres of park land with impervious surfaces (buildings, parking, roads, etc.). These would be adverse effects. Beneficial effects of the proposed action would consist primarily of the implementation of management strategies for maintaining and enhancing cultural and natural resources. Included here are the preparation of an ethnographic overview and assessment, habitat improvement for the park's endangered native water birds, and research, surveys, and monitoring for the protection of marine resources. Other important beneficial effects would be major improvements in visitor safety and interpretive services.

Alternatives considered, in addition to the proposed action, consist of a no-action alternative and two other development options. One of the development options, the minimum requirements alternative, calls for limited facility development and visitor services. The minimal increases in staffing proposed under this alternative would hinder full implementation of resource management strategies. The other development option maximizes vehicle access in the park and puts more emphasis on recreation uses.

The environmental consequences of the proposed action and the three alternatives were fully documented in the draft environmental impact statement and are presented again in the final. The public review period on the draft ended December 11, 1992. The results of public comment on draft plan issues are included in the final. The no-action period on this final plan and environmental impact statement will end 30 days after the Environmental Protection Agency has accepted the document and published a Notice of Availability in the Federal Register. For further information, contact Superintendent, Kaloko-Honokōhau National Historical Park, 73-4786 Kanalani Street, #14, Kailua-Kona, Hawaii 96740.

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**United States Department of the Interior/National Park Service**

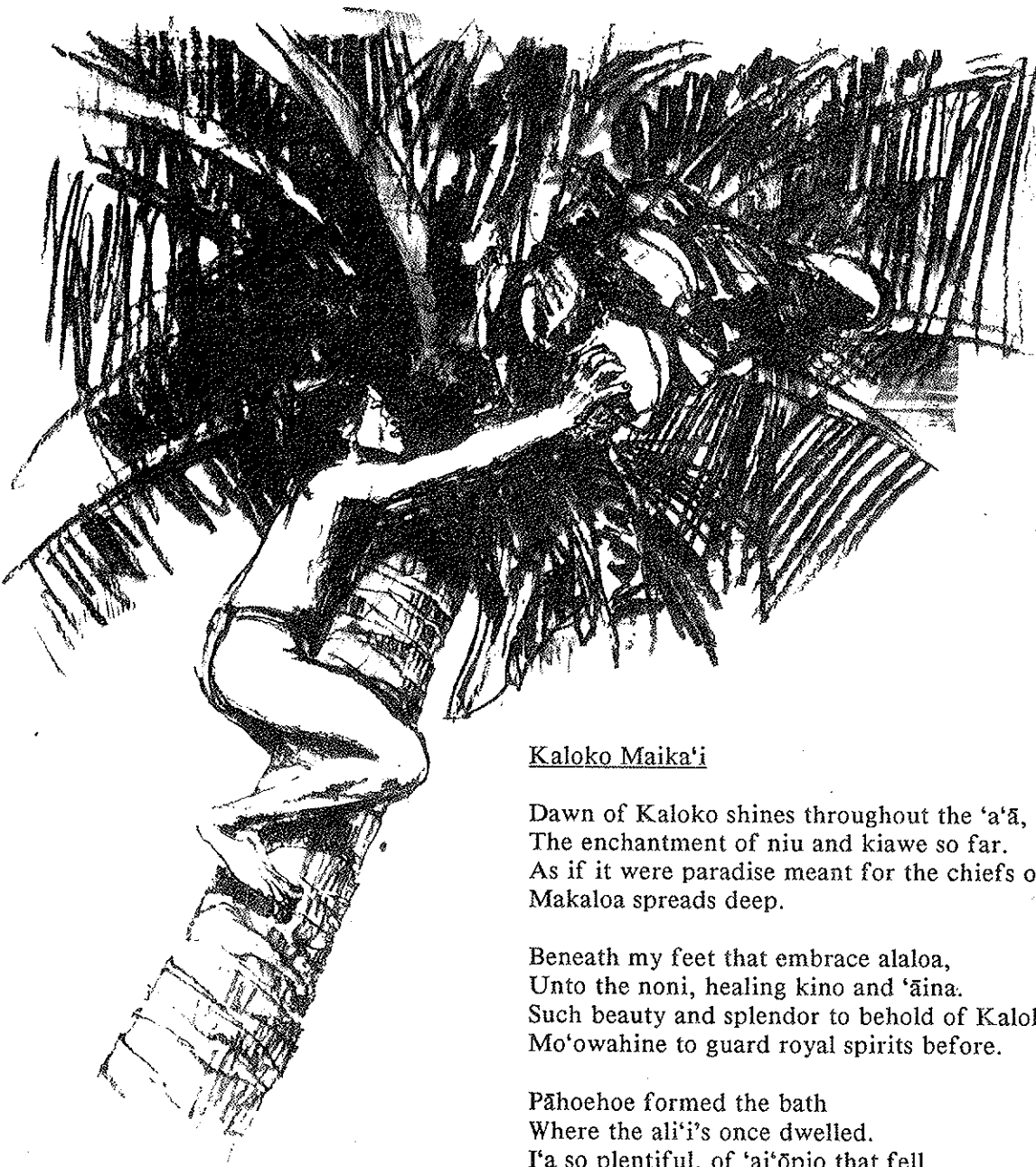


Sketches by Herb K. Kane

# THE SPIRIT OF



# KALOKO-HONOKŌHAU



### Kaloko Maika'i

Dawn of Kaloko shines throughout the 'a'ā,  
The enchantment of niu and kiawe so far.  
As if it were paradise meant for the chiefs of old Hawai'i.  
Makaloa spreads deep.

Beneath my feet that embrace alaloa,  
Unto the noni, healing kino and 'āina.  
Such beauty and splendor to behold of Kaloko.  
Mo'owahine to guard royal spirits before.

Pāhoehoe formed the bath  
Where the ali'i's once dwelled.  
I'a so plentiful, of 'ai'ōpio that fell.  
Surrounding the pond with palu and net  
To feed the people of our culture, our Hawaiians, you bet.

Preserving ahupua'a for generations to come is a thought to behold.  
PA'ANA'AU for our sons  
Of Hawaii and to Kama'aina with joy,  
Kaloko maika'i, aloha iā 'oe.

Nurtured by sun, ka ua, ka makani  
Rolling clouds tumble, above me they huli.  
Someday to return with memories of beauty  
Shown unto me, pure Hawaiian, for surely.

Nani Kupihe  
8th Grade

The Petroglyphs

While walking through Kaloko Park,  
We saw some petroglyphs.  
Pictures they are of Hawaiians,  
In pahoehoe.

I am wondering now,  
Not how but why.  
Why the petroglyphs  
Were made to catch my eye?

I feel their importance,  
Though not by me understood.  
Perhaps in my future,  
I'll know all their good.

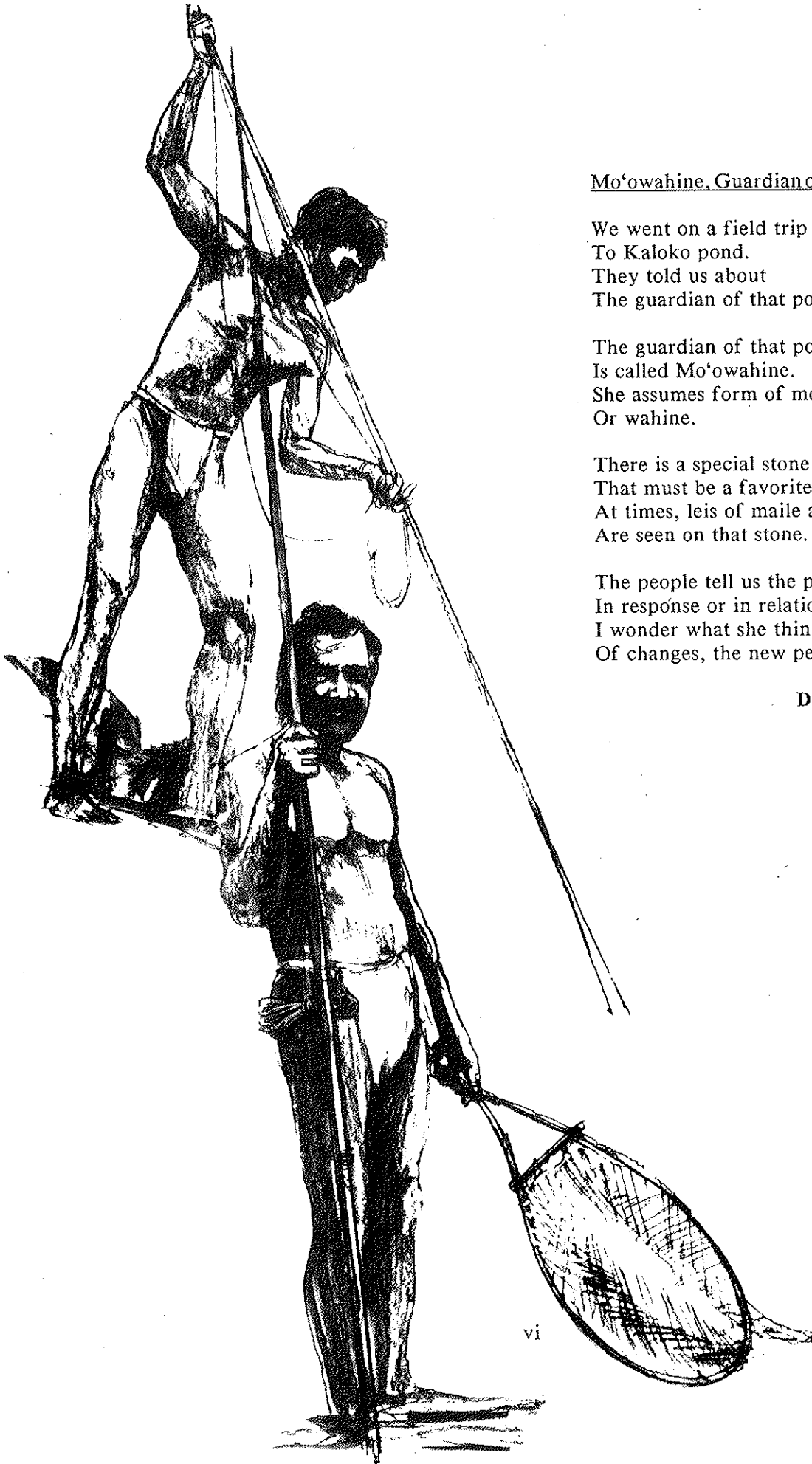
Amy Jean Keana'aina  
8th Grade

Kaloko Honokohau

The ponds of the land are the life of the people.  
We feel the power of the land.  
We feed the land and it returns.  
The land, how good it is.

Keola Amarino  
7th Grade





Mo'owahine, Guardian of Kaloko Pond

We went on a field trip  
To Kaloko pond.  
They told us about  
The guardian of that pond.

The guardian of that pond  
Is called Mo'owahine.  
She assumes form of mo'o  
Or wahine.

There is a special stone in the water  
That must be a favorite place of hers.  
At times, leis of maile and hala  
Are seen on that stone.

The people tell us the pond changes,  
In response or in relation to her.  
I wonder what she thinks  
Of changes, the new people she sees.

**David Haleamau**  
8th Grade



### Feelings at Kaloko

Feel the heat burning on your skin,  
Feeling the breeze flow through your hair,  
Thinking of what the old days might have been like  
With only memories and stories to tell.

Stepping on a rock,  
Staring at a pond,  
Wondering what really happened there.  
As night falls you might hear sounds  
Or even voices of the men working at the kuapā.

You might feel something coming from all directions.  
Maybe there still lives the spirits of they who were once here.  
No one will really know;  
Only what is left back for us to keep and pass on.  
It is important for us, the children, to keep our heritage.

**Chad Kalele  
8th Grade**

### The Past

As I visited Kaloko-Honokohau, I could feel how things were in the past.  
It was beautiful, peaceful, and sometimes very quiet.  
Everyone was either laughing, playing, sleeping, eating, or working.  
Nothing would be better than living in those days.

**Benson Kam  
6th Grade**

These poems were written by students at Kealakehe Intermediate School following their visit to Kaloko-Honokohau National Historical Park in June 1990.



# PREFACE

It is impossible to put down on paper words that fully convey to the reader the spiritual essence of a place like Kaloko-Honokōhau. The only way to really "feel" Kaloko-Honokōhau is to go there yourself and spend some time. However, in 1974, the opening chapter of the Honokōhau Study Advisory Commission's report, Spirit of Ka-loko Hono-kō-hau, did manage very well to capture Kaloko-Honokōhau's spiritual quality in words. In order for this plan to reflect an understanding and appreciation of what needs to be done for Kaloko-Honokōhau, the words of the 1974 study advisory commission are reiterated here.

the spirit of Ka-loko Hono-kō-hau

## PAST

Along the western coastline of the Island of Hawai'i lies the hot, rugged lava of Ka-loko, Hono-kō-hau. This seemingly barren and harsh landscape does not appear to be suitable for human existence, and yet, long before written history, the Hawaiian people built a thriving settlement upon the 'a'ā lava, which was to last well into the 19th century when the forces of western culture slowly brought an end to the Hawaiian way of life.

Some people find it difficult to understand why the ancient Hawaiians chose to settle upon the inhospitable lava fields of Ka-loko, Hono-kō-hau. The reason was, perhaps, a spiritual one, for there was a spirit in Ka-loko, Hono-kō-hau. The Hawaiians who first came to the area felt its presence in every rock and tree, in the gentle waters of the shallow bays, and in the tradewinds that gently swept across the prehistoric lava flow. They touched the spirit and felt its *mana* (power).

The spirit of Ka-loko, Hono-kō-hau was its life, the life that flowed in its land and the water that washed

upon its shore. Like Hawaiians who found its presence elsewhere, the people of Ka-loko, Hono-kō-hau let the spirit become part of their existence. They lived in such perfect harmony with it that they became a singular, total, and inseparable environment.

## THE PHYSICAL SPIRIT

Perhaps only people like the ancient Hawaiians, who had long ago formed a spiritual identification with nature, could recognize that despite the inhospitable lava fields, Ka-loko, Hono-kō-hau had much to give. Only such people could perceive that there were sufficient physical resources to support and satisfy the needs of large populations if they were of the mind and spirit to stay and work with the land.

Ka-loko, Hono-kō-hau had calm seas and shallow landings which made it ideal for the Hawaiian canoes, which were important for transportation, recreation, and fishing. Fish and other marine life were plentiful along the shoreline and offshore waters, with *ōpelu*, *'aku*, and *'ahi* in the offshore deeps and migrating *akule* in the shallows providing more than ample catches for the population. However, seasonal deep-sea fishing was at times unpredictable, so using their practical engineering skills and the contours of the shallow bays at Ka-loko, Hono-kō-hau as natural guides, the Hawaiians constructed fishponds and developed a simple, yet highly sophisticated and efficient system of fish farming that until this day has not been duplicated.

The native plant life which grew in the settlement area was sufficient to provide for many of the needs of the people. Plants such as the native *noni* and *'ilima* were used for medicinal purposes. The *pōhuehue* mat had several uses. When twisted into coils it was used to drive fish into nets, and when foods were scarce, the roots and stems could be cooked and eaten. The stringy land *kauna'oa* could make an effective fish net while the chemical makeup of the *'auhuhu* and *akia* plants were such

that when crushed and strewn in the water, they had a tranquilizing effect on fish. The *'auhuhu* flower was also used to treat people, especially children, with respiratory problems, and the hard wood of the *milo* and *kou* trees was best for making *'umeke* (bowls), and other utensils.

*Pili* grass was used by the Hawaiians to make the thatched walls and roofs of their *hale mau'u* (grass shelters). The warm, pleasant climate of the region made it unnecessary for the Hawaiians to build elaborate shelters. Instead they were able to dwell upon the *pāhoehoe* and *'a'ā* flats in their *hale mau'u*, which were only built to break the exposure to sun, rain, and wind. The *hale mau'u* was functional, as well as easy to build, repair, and replace. More important, this was all the shelter Hawaiians ever needed in Ka-loko, Hono-kō-hau.

The physical location of Ka-loko, Hono-kō-hau made the settlement easy to manage. Situated on the lower portions of a sloping terrain, the settlement's activities were directed by *kahuna* chiefs, from a vantage point, such as the bluff overlooking the fishpond of 'Ai'makapā, where a commanding view of Ka-loko, Hono-kō-hau was available. Tradition has it that directions were issued by arm and *kapa* (tapa) flag signals to subordinates in both areas. In addition, the large platform *heiau* at Maliu Point, known as Pu'u'oina was reputed to be the base of operations for *kahuna* chiefs who governed Hono-kō-hau and the north Kona areas. Its proximity to the ocean and the 'Ai'opio fish trap made it ideal for directing the fishing activities of the settlement.

But the spirit of Ka-loko, Hono-kō-hau revealed itself to the ancient Hawaiians in another form which was, perhaps, the most critical factor in their decision to settle in the area. What they found scattered along the shoreline and among the jagged lava, were cool, brackish water springs. To the Hawaiians, the presence of these springs throughout the area was indication that there was enough of an underground

water source to sustain the everyday needs of a settlement of people.

## THE CULTURAL SPIRIT

The Hawaiian settlement at Ka-loko, Hono-kō-hau did not just survive. It thrived, because the ancient Hawaiians touched and understood the spirit, but did not disturb it. They nurtured the spirit tenderly, like a rare and precious plant, and it grew until it filled everything around it with its being. Their philosophy was a simple and effective one -- "provide for nature and it will provide". In this way they maintained the delicate balance that existed in their sacred relationship with nature. To misuse the natural resources at Ka-loko, Hono-kō-hau would bring upon them the wrath of their all-powerful gods Kāne, Ku, Lono, and Kanaloa, and devastation to their land.

Thus, the people of Ka-loko, Hono-kō-hau, like other Hawaiians of that time, observed their *kapu* system, a set of regulations and prohibitions governing almost every activity of life, religiously. They believe the *kapu* were directed by the gods through the *kahuna* chiefs who imposed them upon the people. Although seemingly rigid and perpetuated by strict enforcement, the *kapu* system had a purpose for the Hawaiians. Its edicts contained their respect for nature's *mana* and the assurance of survival, for many of the *kapu* were designed to protect the land and conserve its resources which ultimately sustained their needs.

One very important *kapu* at Ka-loko, Hono-kō-hau was the one placed on the use of water. The brackish water pools were divided into different functions. Some were specifically for drinking, others for bathing or for washing dishes, utensils, and clothes. Separating the functions of the pools was the people's way of maintaining cleanliness and good health.

Water from these pools was also necessary to sustain the ingenious methods devised by the people

who lived on the lava flats to grow supplementary crops such as sweet potatoes, gourds, and medicinal plants and herbs upon the 'a'ā. These crops were often grown within stone enclosures. To provide the moisture needed by these crops and to ensure protection to the root system in this porous environment, the Hawaiians made use of the husks of dried coconuts. These husks were immersed in the available fresh or brackish water until the color darkened nearly to a shade of black. These soaked husks were then placed around the plant roots, providing a moist environment as well as protection from direct exposure to the sun and dehydration. A regular application of water maintained the desired growing conditions. The walls of the enclosure also provided support for the crawling vines and protection from the wind and afternoon heat.

The porous nature of the soil in the settlement area allowed the underground water source to flow evenly from the slopes of Mount Hualālai to the sea where it eventually evaporated into the sky, fell as rain upon the mountain slopes, and once again flowed underground to the sea. Because of their careful observation and respect for their environment, the Hawaiians knew well enough not to obstruct or interfere with this water cycle in any way which would jeopardize the continuation of this precious resource. As well as supplying the brackish water pools, the water source acted as valuable underground aquifers for the fishponds.

The way Hawaiians constructed and used fishponds also demonstrated their total understanding and appreciation for the resources of Ka-loko Hono-kō-hau. The Ka-loko and 'Ai'makapā ponds were once the largest and best along the Kona Coast of the Island of Hawai'i. The great *kuapā* (sea wall) of Ka-loko was built with large boulders. The Hawaiians constructed two openings known as *mākāhā* (sluice gate) within the wall so that as the tide began to flow in through the *mākāhā*, the fish could enter the pond. At full tide the *pani* (gate) of the *mākāhā* was then closed so that the fish could not escape when

the tide receded. 'Ai'makapā operated much in the same manner except that the pond itself had formed behind a natural beach rather than being enclosed by a *kuapā*. The Hawaiians simply took the natural advantage afforded them and improved it for their own benefit.

As a major source of food supply, these ponds played important roles in the culture of the original inhabitants of Ka-loko, Hono-kō-hau. Thus, once constructed, great care was taken to keep them intact and clean and clear of overgrowth. At times the fishponds were *kapu*, thereby protecting them from human abuse also. Harvests were made at the direction of the ruling chiefs to whom the ponds belonged, within the constraints of the *kapu* system, and usually only in times of stress and need, or when the larger fish were too abundant in the ponds. Seasons were also established when certain ocean fish such as *opelu* and *aku* were *kapu* and could not be caught. In these ways, the Hawaiians regulated the flow and supply of different fish and maximized the efficient use of the ocean and fishponds.

For the Hawaiians of Ka-loko, Hono-kō-hau, fishing was not merely a form of recreation. It was a way of life they lived in order to meet the demands of an exacting environment. They never simply "went fishing". When venturing forth, they always had a specific place and a certain catch of fish in mind. However, even before doing that, they sought the favor of their gods upon the *ku'ula* (fishing *heiau*) which were built around the fishponds and along the coastline. They expressed their gratitude upon return by offering and honoring their gods with the largest and choicest fish in their catch. Only after that was done could the daily catch be portioned out -- first to the chief, then his family and retainers, and so on in line of protocol until all had shared. Their offerings were signs of reverence for the powers that permitted and promoted the growth of their food and allowed them to secure it for their personal use and benefit.

With their simple tools, the Hawaiians of Ka-loko, Hono-kō-hau cultivated the land, built their dwellings, logged the forests, built their magnificent ocean-going *kaulua* (sailing double canoes) and *wa'a* (fishing and war canoes), made their *kapa* for clothing and all their fishing and farming equipment. They learned to use everything that nature had to offer -- stone, wood, bark, sap, fiber, roots, leaves, marine plants, herbs, fruits, nuts, fish, fowl, and animals. In the process they also learned to schedule their time so that there was a balance of activities. There was sufficient time for food production, for developing their unique forms of creative art such as their *mele* (songs), *oli* (chants), and *hula* (dances), and most important, time for their gods. The latter occupied a substantial amount, if not the greater part of time in all their activities. They provided for their gods, and in turn, the gods provided for the Hawaiians.

#### THE HUMAN SPIRIT

There was much more to the spirit of Ka-loko, Hono-kō-hau. The settlement thrived not only because of its physical resources, but also because of its human resources. The Hawaiians' spiritual identification with their land was matched by their sensitivity and close relationship to each other. From this sensitivity developed a socio-economic system based on sharing and mutual cooperation, a system that can best be described by the Hawaiian concept of *kōkua* (helping).

The Hawaiians built a system of trails in Ka-loko, Hono-kō-hau which was used by the people to travel and communicate with *'ohana* (extended family) and friends with the *ahupua'a* (basic land division reaching from mountain to sea). These trails also served as vital lifelines, for it was the custom of Hawaiians living *makai* (seaward) to take fish, salt, and *limu* (seaweed) to *'ohana* and friends living *mauka* (toward the mountains). In return, the people *mauka* shared their products of taro, sweet potato, and breadfruit. Sometimes fires were lit when one

needed the other. The food was then prepared and taken to the origin of the fire. This form of sharing was basic to the Hawaiian way of life, and the trails provided the physical means to make it possible. It was not a matter of trading or bartering, but rather family or friends sharing with others when they "had plenty".

This sharing concept extended beyond the borders of the *ahupua'a* as well. Trails leading along the coast and laterally in the *mauka* areas served as routes for transporting and other items to members of the *'ohana* living in the neighboring *ahupua'a*.

#### THE GUARDIAN SPIRIT

The ancient Hawaiians lived, died, and were buried within the Ka-loko, Hono-kō-hau settlement. In their religious beliefs, Hawaiians made very little distinction between life and death. They faithfully believed that when their *kupuna* (ancestors) passed from this world they traveled to another dimension where they became *'aumakua*, the spirit guardians of the *'oahana*. Thus, the burial sites in the settlement were sacred. They were carefully tended to by the people, for any disturbance of the graves meant that the spirit of their *'aumakua* would also be disturbed.

#### THE ROYAL SPIRIT

There is a mysterious, haunting quality about the burials in Ka-loko, Hono-kō-hau. Most of them are those of the *maka'āinana*, the common people who lived in the area. But, hidden within secret caves or lava tubes, in order to preserve their *mana*, are the bones of the high ranking *ali'i*.

The *ali'i*, the chiefs of various ranks, were those of purest blood and indisputable family seniority. They were considered closest in descent from the gods, and their *mana* and prestige stemmed from this descent. They treasured the lands with fishponds because the ponds were known to be a great source of food supply. Thus, Ka-loko, Hono-kō-hau was



extremely valuable to them because it had three fishponds. They often used the settlement for recreational and ceremonial purposes. Built upon the lava flats around the 'Ai'makapā fishpond were large platforms, enclosed arenas, and a *hōlua* (toboggan slide) which were used during their stay.

Of all the *ali'i* associated with Ka-loko, Hono-kō-hau, the most famous is the great *mō'i* (king), Ka-mehameha I, who first united the Hawaiian Islands under one rule. The *mō'i* had moved his court to Kai-lua, not far from Ka-loko, Hono-kō-hau, and it is said his armies often used the settlement as a place to refresh themselves on their long marches. The major tie with Ka-mehameha, however, concerns the belief that after his death, his chiefly bones were placed in a hidden sepulchre somewhere in Ka-loko near those of other *ali'i*. To this day its exact location remains a closely guarded secret, protected by the Hawaiians' belief that his resting place is sacred and *kapu*.

Ka-loko is also believed to be the resting place of King Kahekili, ruler of Mau'i and purported by some to be the father of Ka-mehameha. Kahekili's sister, Kalola, and her daughter, Keku'iapoiwa Liliha, the grandmother of Ka-mehameha III, are also said to be buried there in the same burial cave as Kahekili.

Ka-loko has always been considered *kapu-kapu* (very scared, to be respected), and its fishpond is said to have a *mo'o*, a spirit guardian that lives within the pond and protects it and the fish from being abused.

## PRESENT

The ancient Hawaiians of Ka-loko, Hono-kō-hau were a proud people, and they had much to be proud of. Their life was not easy, but because of their

remarkable faith in their gods, in themselves, and in the spirit of Ka-loko, Hono-kō-hau, they were able to develop a way of life unsurpassed by any other group of people in the world.

Today, except for occasional use by fishermen, hikers, and campers, most of Ka-loko, Hono-kō-hau lands are idle. But many of the physical, historical, and archeological features of the Ka-loko, Hono-kō-hau settlement remain intact. Archeologists of the Bishop Museum have found and identified approximately 234 sites which encompass almost every functional structure known to Hawaiian prehistory. The most significant sites include the fishponds, *heiau*, *ku-ula* (image used to attract fish), house platforms, *holua*, trails, stone planters, canoe landings and shelters, assembly grounds, salt pans, petroglyphs, *papamu* (checkerboard), and burials. The large number of sites substantiates the fact that large populations of several hundred once occupied the settlement.

Although overgrown and in disrepair, the Ka-loko and 'Aimakapā fishponds and the 'Ai'opio fish trap were the hub of the settlement's activities and a major source of food. They still represent the finest example of the ancient Hawaiian ability to adapt to their physical environment. Fishpond culture was of vast importance to the ancient Hawaiian way of life, and it can now regain much of that value by assisting modern man in adapting to his environment. Both Ka-loko and 'Ai'makapā are well stocked with fish, and 'Ai'makapā is a habitat for native and migratory birds, two of which, the *āe'o* (Hawaiian stilt) and *ko'oa* (Hawaiian duck), are on the endangered species list.

The Pu'u'oina *heiau*, also known as Hale o mano, remains as the best example of a platform *heiau* in Kona. Its primitive beauty and durability are indications of the resourcefulness of the Hawaiian who built it.

Fish are still plentiful in offshore waters, and other sites such as the *hōlua* and stone planters are well preserved. The trails wind lazily through the lava, and the brackish water pools remain refreshingly cool. The graves are intact for the most part, but too many of them have been ransacked for artifacts they may have contained.

Ka-loko maintains its haunting secrets and its *kapu-kapu* atmosphere with the resting place of Kamehameha's bones still a mystery and a matter of conflicting documentation. Perhaps it should remain what it is -- a mystery. One research source, speaking of Kamehameha's burial, stated:

It is in one sense prestigious that history guard the mystery and desired solemnity that the "loko hūnā" provides. If it can be accepted and respected by the Hawaiians, why then can others not be as accepting? Roy and Nahale, Oral History of Hono-kō-hau, (Na Mo'oleloHa'i Waha 'O Hono-ko-hau Ka-loko) unpublished research, Honolulu: Bernice Pauahi, Bishop Museum, January, 1974, p. 46)

However, the spirit of Ka-loko, Hono-kō-hau, the life of the land and the sea, began to wither when it became merely a commodity to be bought and sold. Now it is in danger of extinction.

Because of its scenic beauty and proximity to the ocean and its recreational potential, Ka-loko, Hono-kō-hau is being threatened by encroaching urban and resort development. Landowners in the area have proposed a development plan in which the lands of Ka-loko and Hono-kō-hau are designed for resort and urban use.

# FUTURE

Perhaps the spirit of Ka-loko, Hono-kō-hau has withered because the spirit of the Hawaiian people has withered; slowly eroded by the powerful forces of the west, introduced almost two hundred years ago by profit-seeking merchants and over-zealous missionaries; forces that devastated the Hawaiian population through epidemics, broke down the *kapu* system which provided the basic foundation of the Hawaiian culture, and replaced the Hawaiian system of land tenure with one so totally foreign to the Hawaiians that within a matter of 50 years they found themselves practically landless in their own land.

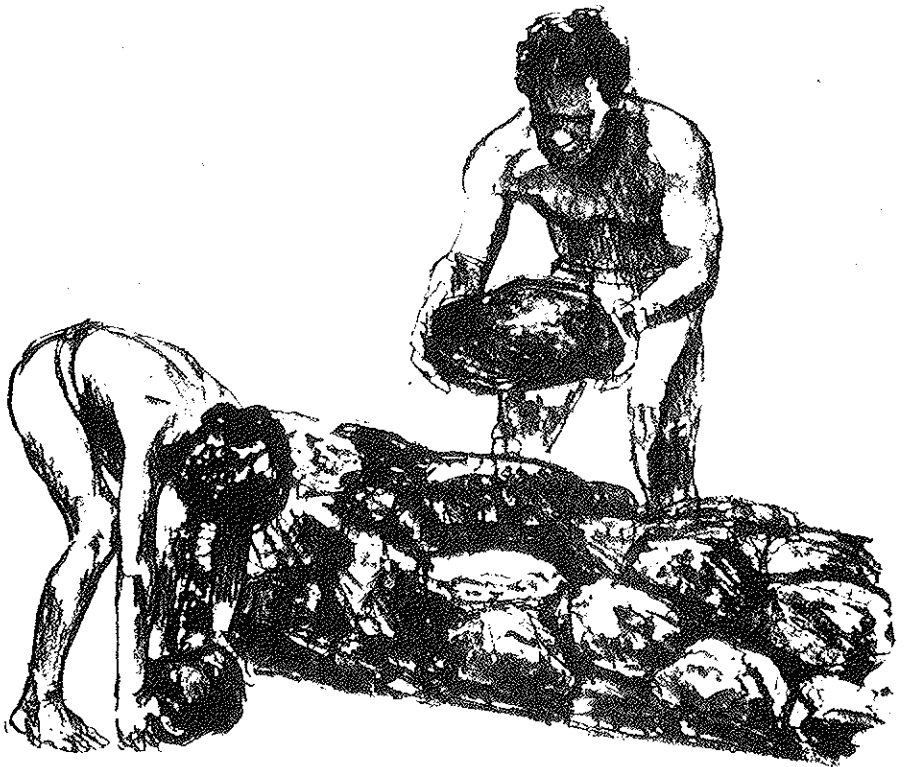
The loss of their land and the disintegration of their culture has left the Hawaiian people virtually lifeless, without much of their identity. Their language and arts are perpetuated by only a diligent few, and except for major events, many Hawaiians know very little about their heritage. But perhaps the most tragic loss Hawaiians have suffered is the sensitivity and spiritual bond to each other which once brought the people of the Ka-loko, Hono-kō-hau settlement so close together.

Today, despite the pressures to assimilate into the now dominant western culture, Hawaiians desperately cling to that spirit so tenderly nurtured by their *kapuna* at Ka-loko, Hono-kō-hau. There is renewed interest among young and old Hawaiians to preserve their land and culture.

They are searching back for their roots, beyond the chaos of the 19th century, to the time when their *kapuna* were self-reliant and industrious; searching for the values which can give them the strength, self-confidence, and most importantly, pride they need to successfully overcome present challenges.

As their land continues to be abused, buried beneath high-rise buildings and concrete highways, Hawaiians are asking, "Are we to witness the continuing despoliation of our land and culture at the hands of so-called progress?"

For these reasons, and countless others, the Hawaiians and other people of Hawai'i who share the Hawaiian culture heritage feel that Ka-loko, Hono-kō-hau will help satisfy their great hunger for a renewal of those cultural and spiritual values that have come so close to extinction in recent decades. The preservation of Ka-loko, Hono-kō-hau as a national park would help renew these very important elements of the Hawaiian identity because it represents the traditional Hawaiian way of life.



## SUMMARY

In developing a general management plan for Kaloko-Honokōhau National Historical Park, it became apparent that many of the environmental and social conditions now facing that park are similar to those confronting other units of the national park system. Those conditions which are external to Kaloko-Honokōhau include an expanding urban area next to the park, incompatible uses of adjacent lands, and rapidly increasing levels of visitor use — all combining to form the realization that in the future Kaloko-Honokōhau will have become an island of open space in the middle of an urban sea. Internally, they include some gaps in the baseline inventory of resources and a lack of both short and long-term monitoring programs to determine the condition of those resources. At Kaloko-Honokōhau, in addition to caring for the park's resources is the need to provide the necessary facilities to allow visitors to understand and appreciate them.

In another respect, however, Kaloko-Honokōhau may be unique in the national park system. It is a special place to many Hawaiians. Hundreds of years ago it was the site of a thriving Hawaiian settlement. Within its boundaries there remains abundant evidence of that settlement and the ancient Hawaiian culture it represents. To Hawaiians, Kaloko-Honokōhau also evokes a spiritualness that today is as strong as it was in ancient times.

Several broad issues were identified during the public scoping period at the outset of the planning process. Issues now facing Kaloko-Honokōhau consist of:

- land acquisition
- adjacent land uses

- access and development
- visitor use
- establishing the park's advisory commission
- resource protection and management

Based on a careful consideration of the issues, plan alternatives, including the proposed action, have been developed.

A no-action alternative is included to determine the consequences of continuing the present course of park operations, and to provide a baseline standard for comparison with the other alternatives. All of the other alternatives call for specific courses of action to address park issues. In the case of Kaloko-Honokōhau, a new park not yet fully operational and lacking any visitor use facilities, issues cannot be dealt with without major actions and changes taking place. A continuation of the existing conditions in the park, maintaining the status quo, will eventually lead to resource degradation and substandard visitor services.

All of the action alternatives, including the proposed action, were developed to address issues in a manner consistent with the park's purpose, as stated in the authorizing legislation and in other laws applicable to the national park system.

The proposed action, which is the National Park Service's general management plan, would lead to full development of the park. Needed facilities proposed in the park, however, will be built in areas which do not contain cultural or natural resources and located away from the coast. They will be of a design that blends in with the historical and open character of the park's landscape. Moreover, they are to be located so as to not interfere with in-depth traditional Hawaiian cultural pursuits taking place in the park.

Under the proposed action, an orientation center is to provide visitors with an introduction to and an appreciation for the traditional Hawaiian way of life. Vehicle access from the existing highway to the orientation center is to be developed. No other roads are proposed in the park. Utilities are to be run into the park from the highway. All utilities would be underground. A park-wide trail system is proposed to give visitors access to the park's cultural and natural attributes. The existing administrative and maintenance facilities located in the nearby Kaloko Industrial Park are to be phased out and are to be built in the park.

The proposed action also calls for a place to be developed in the park where a limited number of people, Hawaiians and others, can come to participate and recreate, over a period of a day or more, the traditional Hawaiian ways. Called the live-in cultural education complex, the low-key traditional facilities to be built here are to be set

apart from visitor activities occurring in the park to allow the participants to immerse themselves in the Hawaiian culture. Nearby, but outside of the complex, traditional activities such as tending fishponds, subsistence shoreline fishing, and subsistence horticulture are to take place. This traditional use of Kaloko-Honokōhau's cultural sites and features is to be an integral part of this national historical park.

Rest rooms are proposed near Honokōhau beach to accommodate the large numbers of visitors who use this area. Utility lines are proposed to run underground from the visitor center to the rest rooms.

Under the proposed action, resource management strategies, as developed in the park's approved resource management plan, are to be implemented by increases in staffing.

A minimum requirements alternative consists of those actions necessary to meet the legislative intent for the protection of the park's cultural and natural resources, and for addressing basic safety and health concerns. Development in the park for visitor services is to be limited and low key.

Access to the park from the highway is to be the same as under the proposed action, as would the trail system. Under the minimum requirements alternative, no utilities are to be run out to the rest rooms proposed near Honokōhau beach. Instead, chemical toilets will be installed here. The existing park administrative and maintenance facilities at the Kaloko Industrial Park are to be retained.

The live-in cultural education complex, under the minimum requirements alternative, is to be developed as it would have been by the ancient Hawaiians. Only traditional tools and methods would be used. No modern amenities would be provided at the facility.

The maximum development alternative gives more emphasis to vehicular access in the park and to recreation use of the beaches and shoreline. Paved roads are to be built in the park and additional visitor parking is to be provided at sites near the coast. Utility lines are to run underground to the live-in cultural education complex. Under this alternative, this facility is to be developed with modern amenities. The visitor orientation center, under this alternative, is to be developed the same as in the proposed action.

The proposal related to land acquisition is the same for all alternatives, including the no action. Proposals related to adjacent land uses, access, visitor use and interpretation, and resource protection and management have similar management objectives under all of the action alternatives. Implementation of proposals related to resource management and visitor services, however, would be constrained by the differing levels of staffing proposed under each of the action alternatives.



All of the alternatives call for the setting aside of areas in the park where appropriate facilities would be developed and activities would take place for the recreation and perpetuation of the traditional Hawaiian lifestyle and culture. The facility would be developed in a place removed from the major visitor use area and would not be part of an exhibit. Overnight accommodations would be provided there to permit the experience to extend over a period of a day or more.

The environmental consequences of implementing the no-action alternative would in the long term be degradation of the park's resources, both natural and cultural. The lack of development in the park would avoid the adverse effects connected with facility construction; however, these benefits would be offset by the adverse effects related to inadequate visitor services which eventually would become substandard with the expected major increases in visitation. The lack of any formal access to the park would lead to unsafe conditions for visitors, also an adverse effect.

Development under the proposed action would have minimal adverse effects on the park's resources. The introduction of underground sewer lines into the park would create the potential for an adverse effect on the park's groundwater. However, the construction of rest rooms would significantly reduce the adverse effect now occurring from contamination of anchialine pools, fishponds, and near-shore waters by human waste. So the overall effect would be beneficial. Implementation of the proposed action would greatly improve visitor services through the construction of a major orientation center. There would also be a beneficial effect on the local economy resulting from the costs of construction. Implementation of resource management plan strategies becomes possible under the proposed action, a major and long-term beneficial effect. No known archeological sites or features and no threatened or endangered species would be adversely affected by the proposed action.

Implementation of the minimum requirements alternative would result in environmental consequences, both beneficial and adverse, of a lesser degree than the proposed action. Some resource management strategies could be implemented and visitor services would be improved somewhat. However, implementation would have limited beneficial effect on the park's cultural and natural resources. There would be limited beneficial effects on the local economy. Under this alternative, the lack of an underground sewer line to the rest room facilities proposed near Honokōhau beach would reduce the possibility of spills from broken pipes adversely affecting the park's groundwater.

Implementation of the maximum development alternative would result in environmental consequences greater than the proposed action. There would be more development and some of it would be located near the coast and in proximity to the park's cultural and natural resources. More visitors would be in the park's coastal areas and would have a greater potential to adversely affect threatened and

endangered species. Also, there would be additional underground sewer lines placed in the park, increasing the potential for the park's groundwater being adversely affected from broken pipes. Consequently, there would be increased potential for adverse effects in the park under this alternative. In contrast, implementation of this alternative would have the greatest beneficial effect on the local economy because of the greater costs of construction.

## Comparison of Effects

	No Action Alternative	Proposed Action	Minimum Requirements Alternative	Maximum Development Alternative
Cultural Resources	No damage or destruction of cultural sites or features due to construction of park facilities. Lack of visitor orientation facilities, the lack of interpretive staff, and the absence of boundary fencing, however, increase the potential for disturbance or damage to cultural sites or features from uninformed visitors. This adverse impact will increase over time as visitation increases.	Developments proposed under this action would alter the historic scene at several locations in the park. None of the proposed developments would directly affect any known cultural sites or features. If previously unknown cultural resources are found during construction, all work would stop and a professional archeologist consulted.	The overall adverse effect on the historic scene from proposed developments would be less than under the proposed action. None of the modest developments proposed under this alternative would directly affect any known cultural sites or features.	Proposed developments under this alternative would have the greatest adverse effect on the historic scene of the park. Known cultural resources could be adversely affected by the development of vehicle access to coastal portions of the park, which places greater numbers of visitors in close proximity to these resources. Visitors would be placed very near Hawaiian burial sites.
	The limited existing staff would not be capable of implementing the park's resource management plan. Not obtaining ethnographic information from knowledgeable Hawaiians in a timely manner could result in a permanent and irretrievable loss to the park's intangible cultural values.	The construction of a visitor orientation center and a park interpretive division would greatly increase the visitor's knowledge and appreciation of the park's cultural resources.	The development of modest on-site interpretive facilities would improve visitor knowledge and appreciation of park cultural resources.	The visitor orientation center and an expanded interpretation division would greatly increase visitor knowledge and appreciation of cultural resources.
Geology	No damage due to construction of new park facilities. Lack of controlled access to the park greatly increases the potential for surface disturbance from illegal off-road vehicle use in the park.	The park's capability of implementing resource management plan strategies would be greatly enhanced by the proposed increases in staffing.	Very minor adverse effect due to new construction.	Cultural resource management plan strategies would have the best chance of being fully implemented under this alternative.
		Minor adverse effect. Most of the new construction will take place on lava already disturbed (bulldozed).		This alternative calls for the greatest amount of surface disturbance from new construction.

	No Action Alternative	Proposed Action	Minimum Requirements Alternative	Maximum Development Alternative
Freshwater Resources	<p>Damage to the park's anchialine ponds due to <i>mauka</i> discharges into injection wells, septic systems, cesspools, and lava tubes would have the best chance of continuing.</p> <p>Damage to well-known anchialine ponds from unstructured visitor use would continue.</p>	<p>Would have a beneficial effect on the park's anchialine ponds through implementation of resource management plan strategies, possible because of staffing increases, and improved interpretive and protection services.</p> <p>The construction of new facilities, primarily the paved parking lot, would create about four acres of impervious surface, thereby increasing surface runoff. It is likely that the runoff would contain small amount of petrochemicals (from vehicles) which could enter the park's groundwater during periods of rainfall.</p> <p>Introducing underground sewer lines into the park has the potential to adversely affect the park's groundwater. The use of ductile iron pipe for sewer lines will greatly reduce the potential adverse effect.</p>	<p>The amount of new impervious surface would be less at the visitor center, so there would be only minor increases in surface runoff. No underground utilities are to be run to the proposed rest rooms at Honokōhau beach, thus eliminating the possibility of adverse effect on anchialine ponds from sewage spills.</p>	<p>Overall effects would be similar to the proposed action. With more underground sewer lines in the park, however, there would be a greater potential for an adverse effect on the park's groundwater.</p>
Vegetation	<p>Removal of mangrove from around Kaloko fishpond could be completed. However, implementing the strategies contained in the park's resource management plan for the removal of alien plants would not be possible because of limited staff. The fire hazard in the park due to the continuing presence of fountaingrass would remain and would increase over time.</p>	<p>Little adverse effect on vegetation from new construction. Carrying out resource management strategies for the removal of alien plants and the re-establishment of natives and Polynesian introductions are possible due to staffing increases in vegetation management. These are regarded as beneficial effects. The eventual removal of alien grasses will reduce the existing fire hazard in the park.</p>	<p>Very little adverse effect on vegetation from proposed developments. Modest increases in resource management staff would allow for some of the vegetation management strategies to be carried out.</p>	<p>Strategies for alien plant removal and the re-establishment of natives and Polynesian introductions in the park would have about the same chance to be implemented as under the proposed action.</p>

	No Action Alternative	Proposed Action	Minimum Requirements Alternative	Maximum Development Alternative
Threatened and Endangered Species	Protection of the park's wetlands as habitat for the endangered Hawaiian coot and stilt would be difficult to achieve.	Beneficial effect on the endangered coot and stilt due to habitat improvement and predator control. Increases in resource management staff allow needed studies to proceed and the formulation of management recommendations.	Some improvement in endangered water bird habitat. No real capability to proceed with needed studies under this alternative.	Strategies for habitat improvement and predator control would have about the same chance to be implemented as under the proposed action.  Locations proposed for additional developments would place greater numbers of visitors in proximity to threatened and endangered species habitat. This would be a major adverse effect.
Air Quality	No adverse effect due to the construction of new facilities. Park more likely to be adversely affected by uses and activities occurring on adjacent lands.	Short-term decrease in air quality from dust during construction. Increases potential for influencing decisions on lands outside the park which could adversely affect the park's air quality.	Construction of low-key development would have a minor and short-term adverse effect on air quality.	Adverse effects from construction activities would be similar to the proposed action.
Visitor Services	Would become substandard and unsafe. No on-site facilities for interpretation of the park's resources. No formal access to the park. Unsafe conditions would develop for visitors forced to park along the highway.	The quality of visitor orientation, information, and interpretation would be greatly improved through the construction of a visitor orientation center on-site and staffing for an interpretive division. Formal access to park from highway eliminates safety hazard.	Some improvement in the quality of visitor orientation and information by the development of modest visitor center. Formal access established from highway. Major improvements in interpretive services would be constrained by the limited staffing.	In the long term there would be some decrease in the quality of visitor services due to greater numbers of visitors coming for a recreational experience.
Local Economy	Very little or no effect.	The construction costs connected with implementing this action would have a short-term beneficial effect on the local economy. The income from jobs generated by the park would also benefit the local economy. This benefit would be long term.	Construction costs for developing park facilities and access would have a short-term beneficial effect on the local economy, as would income from jobs generated by the park. These short and long term effects would not be as much as under the proposed action.	Implementation of this alternative would have the greatest monetary effect on the local economy, both long term and short term.

	No Action Alternative	Proposed Action	Minimum Requirements Alternative	Maximum Development Alternative
Management and Operations	Lack of on-site facilities and a limited staff would continue to place restrictions on efficient management to protect resources and provide adequate visitor services. Agency and landowner coordination would be limited, and the park's ability to influence decisions on adjacent lands severely curtailed.	Increases in staff (resource management and interpretation) would permit more efficient and thorough management to protect resources. This would extend to an increased capability to influence land-use decisions outside of park boundaries.	Limited increases in staff would permit some improvements in park management and operations.	Management and operations would be somewhat constrained by changes in the nature of visitation (more visitors, different kinds of visitors staying longer.)
Marine Resources	Little effect in the near future; in the long-term there would be an adverse effect due to limited on-site management.	Long-term beneficial effect due to greater level of on-site management. The addition of the marine biologist position to carry out needed research, surveys, and monitoring would greatly enhance the park's capability to better protect marine resources.	Some improvement in on-site management capability.	Same as the proposed action.

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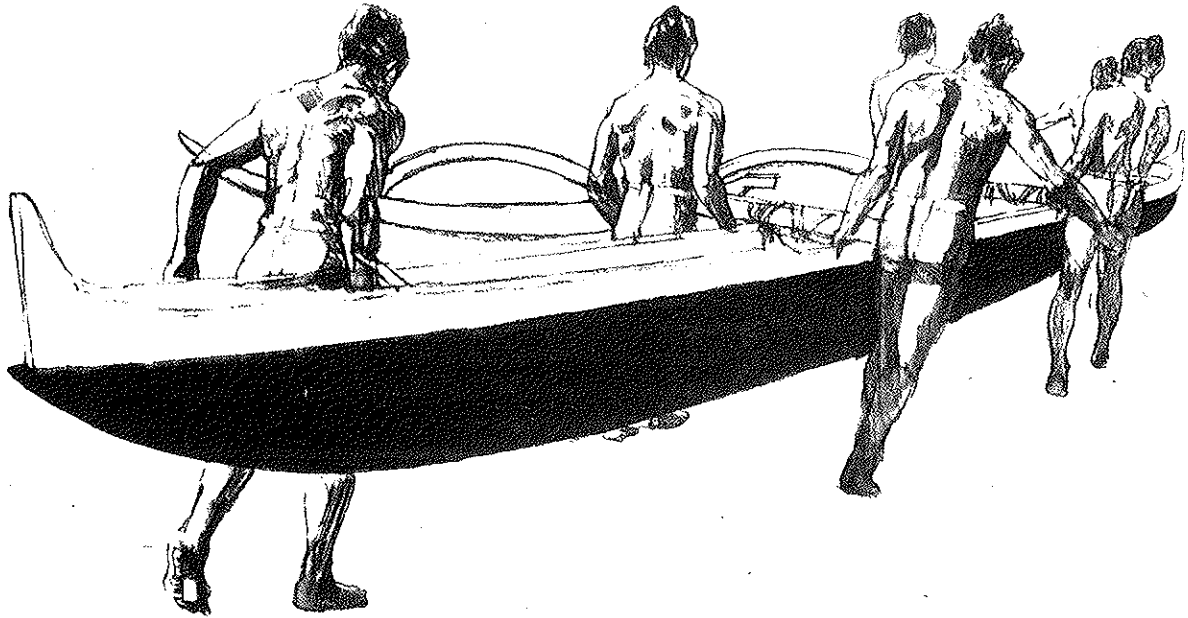
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## PURPOSE OF AND THE NEED FOR THE PLAN (ISSUES)

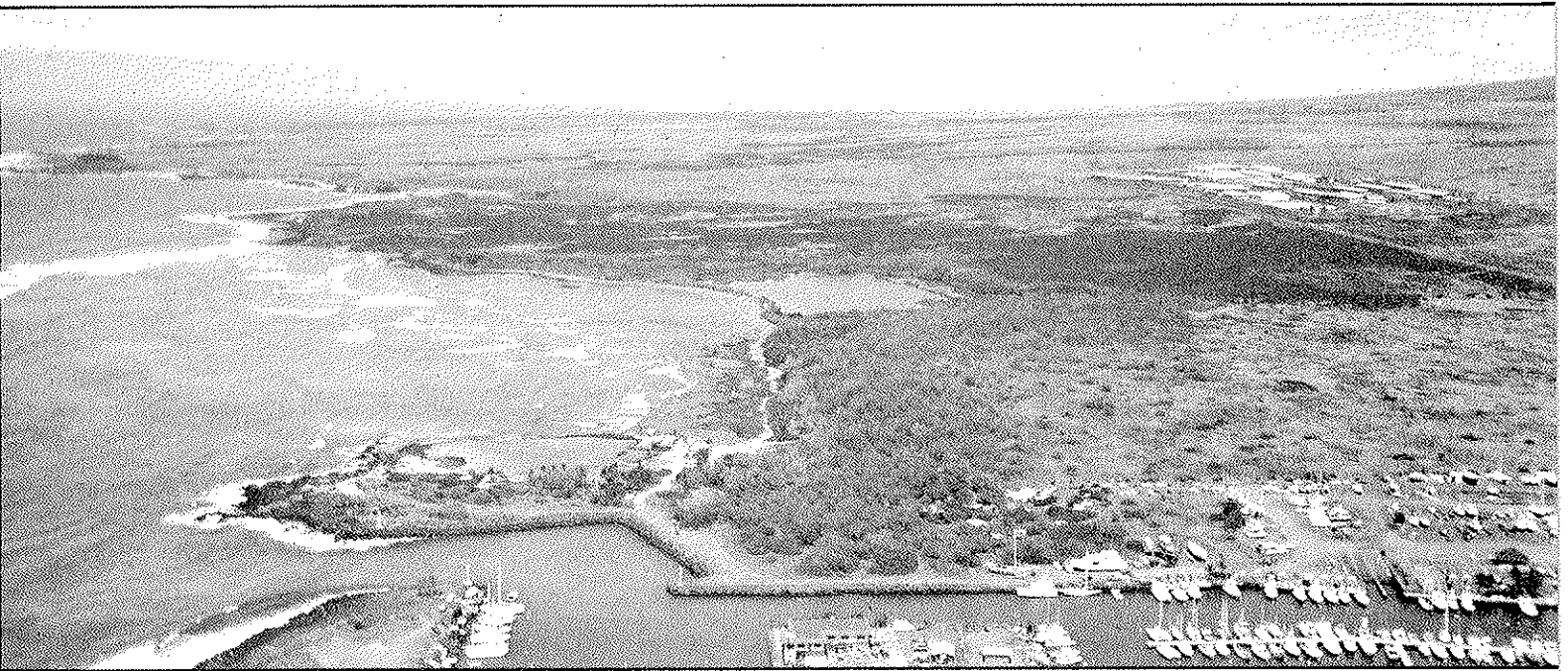
Kaloko-Honokōhau National Historical Park was authorized in 1978 by Public Law 95-625 "to provide a center for the preservation, interpretation, and perpetuation of traditional native Hawaiian activities, and culture, and to demonstrate historic land use patterns as well as provide needed resources for the education, enjoyment, and appreciation of such traditional native Hawaiian activities and culture by local residents and visitors..." and be administered in accordance with "provisions of the law generally applicable to the national park system, including the Acts approved August 25, 1916, and August 21, 1935..." These acts give direction in preserving natural and cultural resources of the park. Because the park has extensive archeological and biotic features, both the National Historic Preservation Act and the Endangered Species Act have significant applications to many management options. Nearly all of the land area in the park has been designated a national historic landmark; two endangered vertebrate species nest within the park.

Congressional authorization of the national historical park was based primarily on a proposal contained in the 1974 study report, Spirit of Ka-loko Hono-kō-hau. Mandated by Congress, this study report was developed by an advisory commission of native Hawaiians and the National Park Service.

Kaloko-Honokōhau is located on the North Kona coast of the island of Hawai'i, approximately three miles north of the town of Kailua and three miles south of the Keāhole Airport. Hualālai volcano's 8,271-foot summit lies 10 miles east of the park. The park area consists of

those lands in the *ahupua'a* of Kaloko and Honokōhau *makai* of the Queen Ka'ahumanu Highway, a coastal strip extending to Wāwāhiwa'a Point in the *ahupua'a* of Kohanaiki, and two small parcels located in the *ahupua'a* of Kealakehe next to the Honokōhau small boat harbor (see Figure 2). The park also includes the waters of Honokōhau Bay.

In 1982, the National Park Service effected a minor refinement of the park's southern boundary on State of Hawai'i lands in the vicinity of the small boat harbor (notice of this boundary revision appeared in the Federal Register of March 25, 1983). The purpose of the revision was to recognize the expansion of the small boat harbor. The revision was carried out in consultation and cooperation with the State Department of Transportation (Harbors Division).



Kaloko-Honokōhau, with its rich heritage of Hawaiian culture, lies along the warm and sunny Kona coast of the island of Hawai'i. Although this area is now mostly undeveloped, lands around the park are becoming urbanized.

At the time of authorization, park lands and waters were composed of four parcels of privately owned lands totalling in excess of 630 acres, and approximately 500 acres under the jurisdiction of the State of Hawai'i (nearly all of the State holdings within the park are the offshore waters of Honokōhau Bay). Section 505(b) of the authorizing legislation states that "Except for any lands owned by the State of Hawai'i or its subdivisions, which may be acquired only by donation, the Secretary is authorized to acquire the lands above by donation, exchange, or purchase through the use of donated or appropriated funds..."

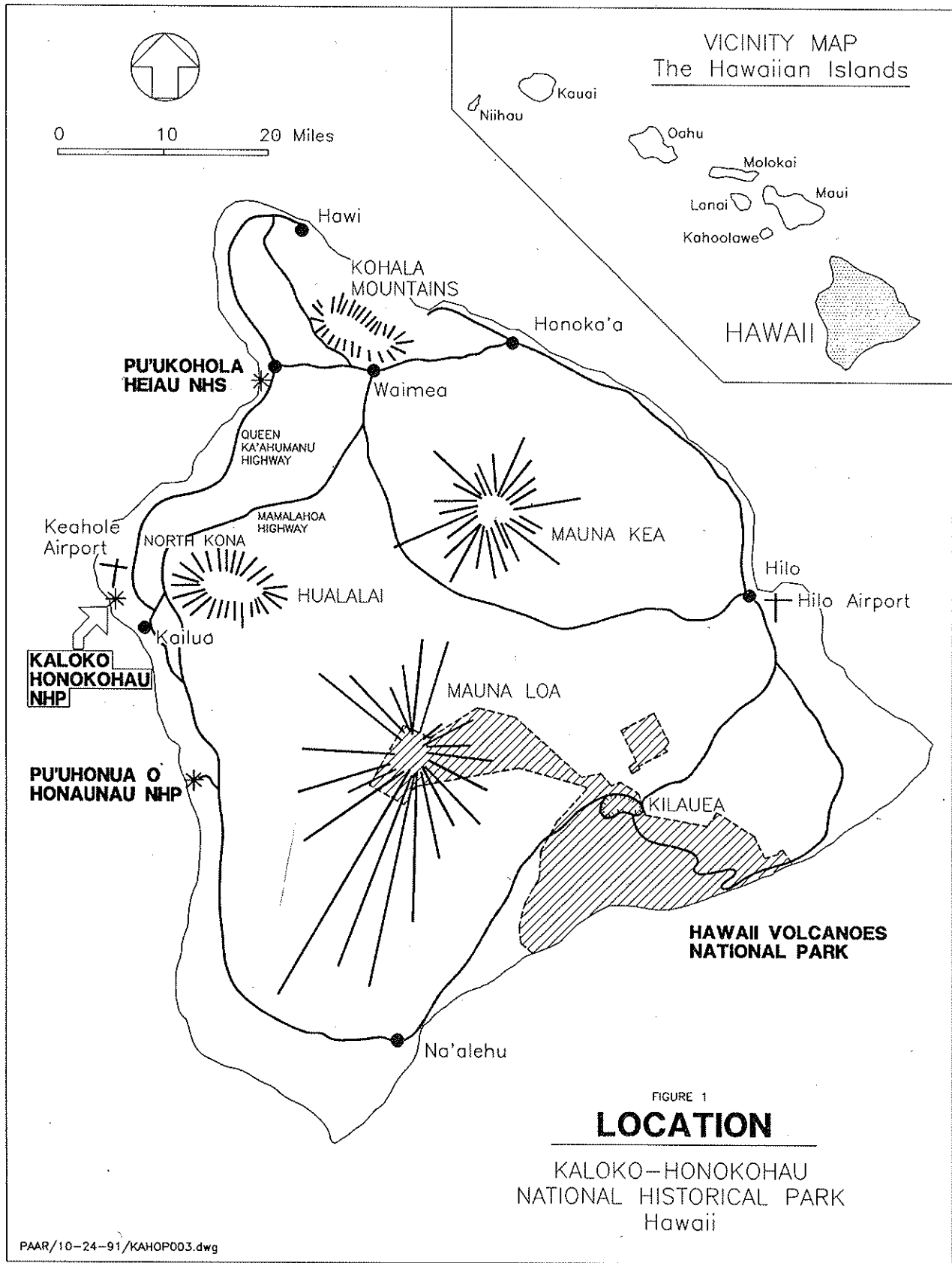


FIGURE 2

# NORTH KONA AREA

KALOKO--HONOKOHAU  
NATIONAL HISTORICAL PARK  
Hawaii



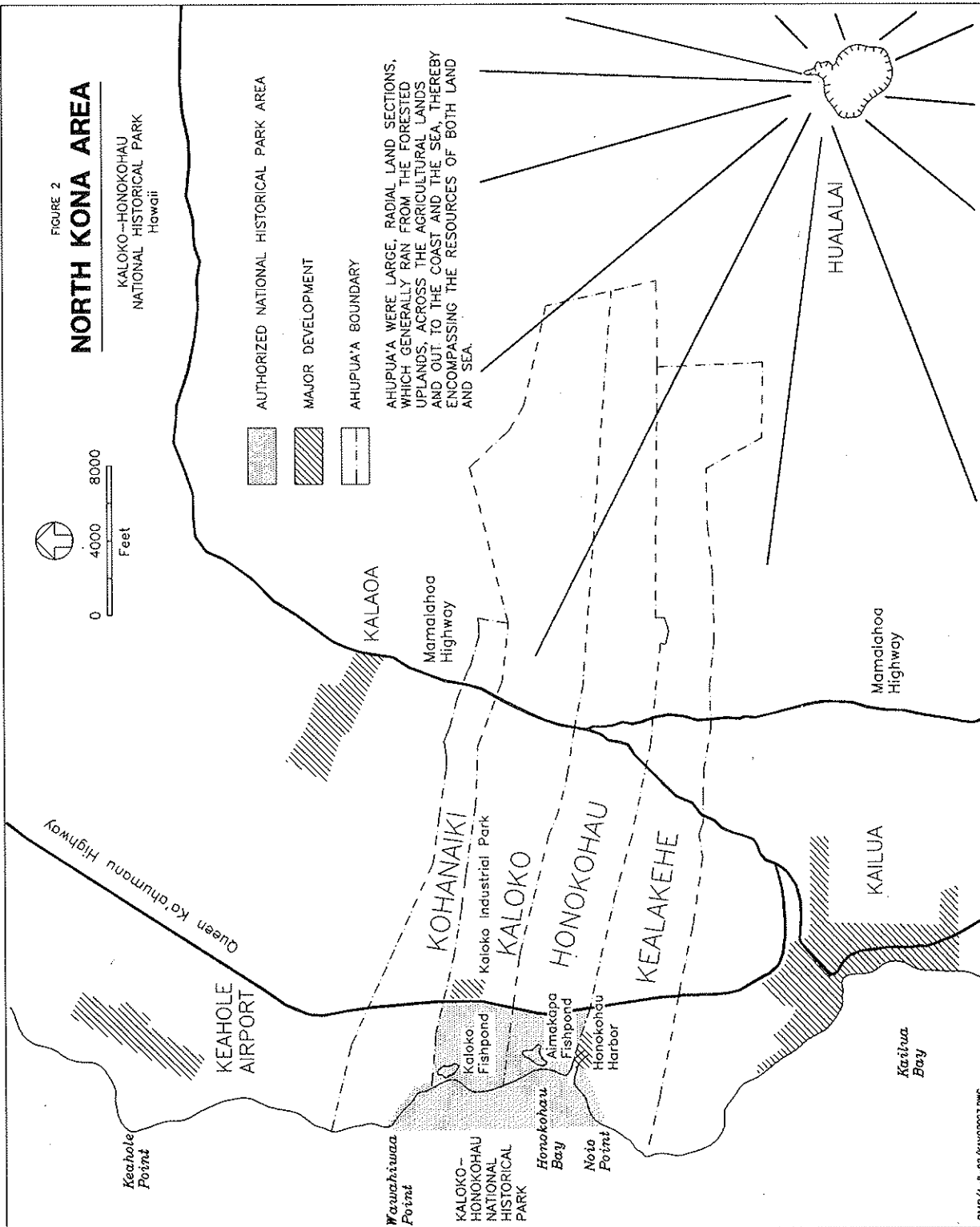
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AUTHORIZED NATIONAL HISTORICAL PARK AREA

MAJOR DEVELOPMENT

AHUPUA'A BOUNDARY

AHUPUA'A WERE LARGE RADIAL LAND SECTIONS, WHICH GENERALLY RAN FROM THE FORESTED UPLANDS, ACROSS THE AGRICULTURAL LANDS AND OUT TO THE COAST AND THE SEA, THEREBY ENCOMPASSING THE RESOURCES OF BOTH LAND AND SEA.



PAW/4-8-92/NAKOP023.DWG

Due to the unavailability of appropriated funds to acquire privately owned lands in the park and the lack of success in acquiring these lands by other means, in 1980, Public Law 95-625 was amended to authorize the National Park Service to acquire Federal surplus lands from the General Services Administration (GSA) for the purpose of equal value exchange for privately owned lands in the park. In 1983, authority was given to the National Park Service to acquire privately owned lands in the park by the issuance of credits in payment for the lands to surplus property accounts to be established by GSA for the former landowners. Further, the former landowners could then use the credits to purchase surplus properties without geographical limitation by bidding on them. The above described methods have been used to acquire lands at Kaloko-Honokōhau.

The National Park Service has acquired three of the four privately owned parcels, the last one in October 1990, and has achieved a land base sufficient to begin master planning for the future operation and development of the national historical park. A general management plan is now needed to provide a long-range framework to permit orderly development and public use of the park.

The general management plan for Kaloko-Honokōhau is to be based on the recommendations for preservation, interpretation, management, and research contained in the 1974 Spirit of Ka-loko Hono-kō-hau. The study report's advisory commission called for the site of the Honokōhau Settlement National Historical Landmark and adjacent waters to be preserved for the benefit of the Hawaiian people and the nation as a part of the national park system. The park was envisioned by the study commission as a center for the reorientation and perpetuation of Hawaiian activities, culture, and basic land use patterns.

Other planning documents used in the preparation of this general management plan consist of the 1982 Resource Protection Case Study, the 1984 Land Protection Plan and Addendums (1986 and 1989), the 1988 Statement for Management, and the 1991 Resource Management Plan. The case study recommended (1) that the boundaries of the park remain as originally authorized, except for a refinement in the southern boundary around the boat harbor, and (2) that all privately owned lands in the park be acquired in fee. The land protection plan and its addendums reiterated the need for fee acquisition of the privately held lands in the park. This was judged to be the most effective way to ensure permanent protection of resources, provision of visitor use, and the development of visitor and cultural centers, as well as to satisfy the long-held concerns of property owners. The plan also set priorities for land acquisition on a tract-by-tract basis. The statement for management identifies management objectives for the park in resource management, research, interpretation/visitor use, cooperation, and operation/safety. The resource management plan focuses on the major cultural and natural resource related issues now facing Kaloko-Honokōhau. After identifying and describing these issues, the plan identifies individual resource management projects

and sets a funding priority for future programming activity needs on a project-by-project basis.

This general management plan takes the concepts of preservation, use, and development contained in the 1974 Spirit of Ka-loko Hono-kō-hau report and translates them into specific proposals for action. These proposed actions will encompass the full spectrum of general management plan issues, including visitor services, the interpretation of park resources, park administration and maintenance, and the protection and management of resources. Cost estimates to carry out the proposed actions have been developed for construction and staffing.

Direction provided in the authorizing legislation germane to the development of this general management plan includes: (1) the provision of traditional native Hawaiian accommodations; (2) entering into cooperative agreements with the State of Hawai'i for the management of submerged lands within the authorized boundary; and (3) agreements with other government entities and private landowners to establish adequate controls on air and water quality and scenic and aesthetic values of the surrounding land and water. The authorizing legislation also called for the establishment of a nine-member advisory commission for the park. The commission, to be appointed by the Secretary of the Interior, is to have at least six members be native Hawaiians.

Kaloko-Honokōhau's general management plan must deal not only with customary resource management and visitor use matters, it must also attempt to convey a real sense of this very special place. When Congress authorized the park, it endorsed the concept of a place where Hawaiians and others could return to live, at least temporarily, in the manner of their forefathers, and to have the opportunity to learn by experiencing some of the cultural values of the past. Therefore, in the planning of needed visitor park facilities and in the future management and interpretation of park resources, we (the National Park Service and others involved in the development of this master plan) must be open to the "spirit" of Kaloko-Honokōhau and allow it to guide us. We must try to look at things as the Hawaiians would have and see not only what's there physically, but what's there spiritually.

This general management plan is the first comprehensive planning document for the park. Consequently, it was prepared in sufficient detail to proceed directly to design of needed facilities and the implementation of proposed resource management actions.

At the onset of the planning process, public scoping meetings were held followed by an open period to receive comment. During this period, views and concerns were expressed by the public. Based on the careful consideration of these views and concerns, major plan issues were defined. This general management plan deals with the following major issues now facing Kaloko-Honokōhau. These issues,

in turn, form the basis for the development of plan alternatives, including the proposed action.

## **Land Acquisition**

Within authorized boundaries, an 18-acre coastal strip in the *ahupua'a* of Kohanaiki from the Kaloko *ahupua'a* line north to Wāwāhiwa'a Point remains in private ownership. This parcel contains significant archeological features, including a *heiau*, and is the northern anchor of Honokōhau Bay, an important park resource.

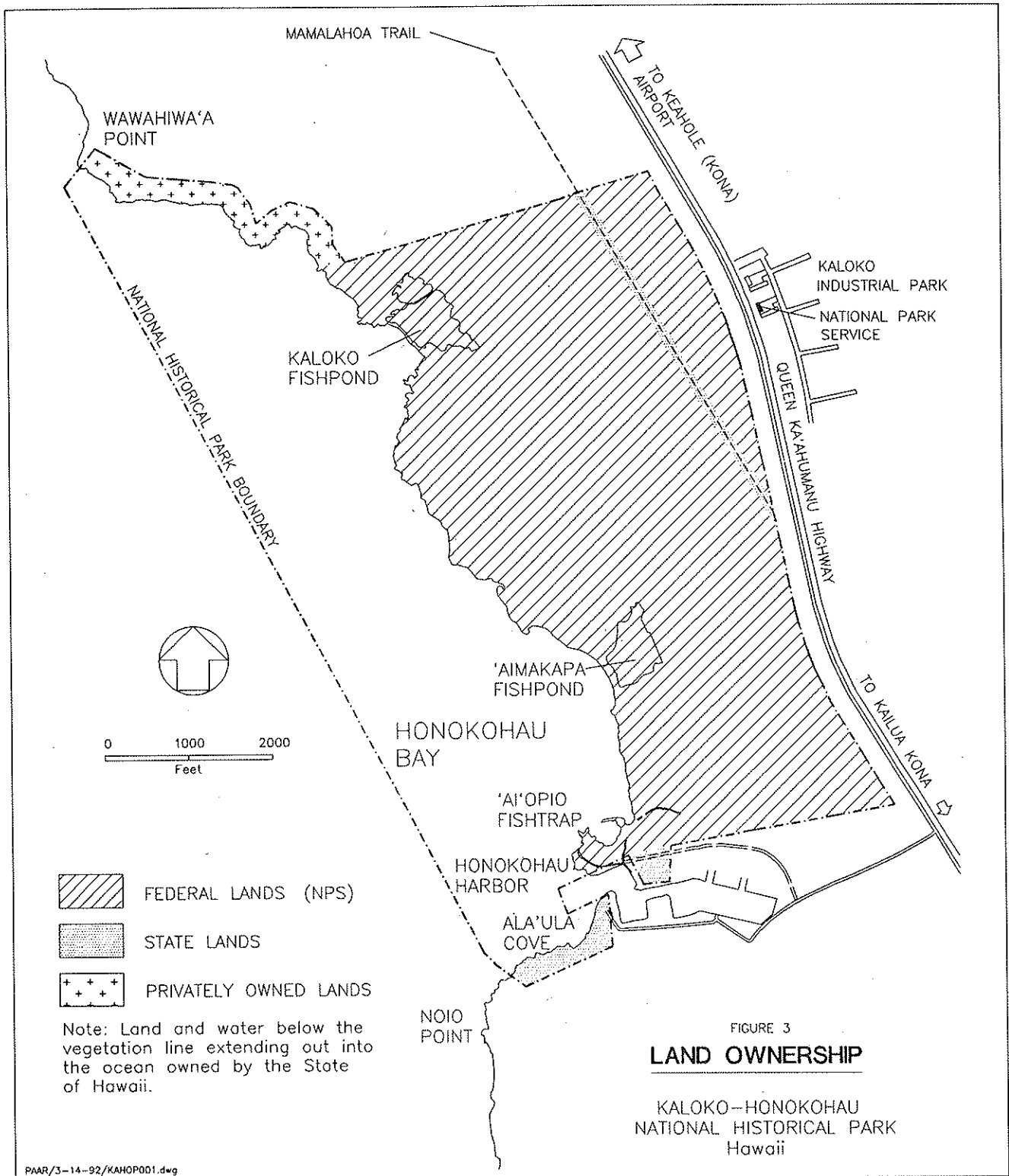
The intent of the National Park Service is to acquire all privately-owned lands within the authorized boundaries of Kaloko-Honokōhau National Historical Park. In 1986 land classification of the 18 acres within Kaloko-Honokōhau was changed from Conservation to Urban by the State Land Use Commission. The change was requested by the property owner in order to permit the development of a large resort-residential project on several hundred acres of the *makai* lands in the Kohanaiki *ahupua'a*. Lands within the authorized boundaries of the national park comprise most of the coastal portion of the total project.

Local residents have publicly expressed opposition to the development project, particularly the coastal portion. To date, no permits have been obtained by the developer from either the Corps of Engineers or Hawai'i County for the marina portion of the project, which falls within the park's authorized boundary. At one of the public scoping meetings, the developer's representative stated that plans for the marina portion of the project had been postponed.

During the scoping period for general management plan preparation, the National Park Service received more than 900 responses in the form of public comment on many plan issues. Of these 900 responses, nearly 60 percent were concerned with the land acquisition issue and called on the National Park Service to include the 18-acre parcel in the park and opposed plans for development there. Only one response objected to the National Park Service acquiring additional beach front property.

## **Management of State Lands and Waters Within the Park**

The park contains within its authorized boundaries more than 500 acres under the jurisdiction of the State of Hawai'i. Nearly all of this area is comprised of the offshore waters of Honokōhau Bay — these waters are administered by the State Department of Land and Natural Resources. Two small land parcels on either side of the entrance to Honokōhau Harbor total about 26 acres and are also administered by the Department of Land and Natural Resources. Both parcels contain significant archeological sites. In addition, the portion of the historic





Māmalahoa Trail corridor within the park is also under the jurisdiction of the Department of Land and Natural Resources. Outside park boundaries, the Department of Transportation has an easement over the entrance to Honokōhau Harbor. The National Park Service believes it would be desirable to be involved in the management and protection of the lands and waters within the park owned by the State because of the nationally significant cultural, natural, and marine resources found there.

The National Park Service is attempting to negotiate a lease agreement with the Department of Land and Natural Resources covering the 26 acres of land within authorized boundaries owned by the State of Hawai'i and containing important park resources. These lands consist of a nine-acre parcel just north of the Honokōhau Harbor entrance containing archeological features and anchialine ponds, and a 17-acre parcel south of the harbor containing the Maka'ōpio *heiau*, anchialine ponds, and the fine sand beach at Ala'ula cove. Alternate lease language is under consideration by State and National Park Service officials.

To date, there has been no action on the National Park Service's request to the State Department of Land and Natural Resources to designate the offshore waters within Kaloko-Honokōhau's boundaries as a Marine Fisheries Management Area or Marine Life Conservation District.

## Adjacent Land Use

Future planning for the park because of its location next to an expanding urbanized area needs to be done in a regional context, taking into account what is happening on lands around the park. Over the past two decades, major changes in land use have occurred in the vicinity of Kaloko-Honokōhau. The coming decades promise even greater changes will take place on these adjacent lands. No longer will they be in open space and unoccupied. Light industrial development has already occurred on some of the *mauka* lands and there are plans for much more to the north and south of the park — resorts, residential housing, commercial and governmental centers, educational facilities — all part of the plan to make nearby Kailua town a major future urban growth area for the island of Hawai'i.

The study report, Spirit of Ka-loko Hono-kō-hau, calls for the use of the traditional Hawaiian *ahupua'a* concept of land use in securing off-site controls to ensure that the integrity of Kaloko-Honokōhau is maintained. The study report stated that the State of Hawai'i should be prevailed upon to keep much of the area around the then proposed park in the Conservation District classification. Unfortunately, in the intervening years, the opposite has occurred and much of the land around Kaloko-Honokōhau has been reclassified from the Conservation to the Urban District to pave the way for future development. Regarding adjacent land uses, the 1974 report also

those activities which are compatible with a national park. Similarly, the report calls for Hawai'i County to zone adjacent lands to preserve the integrity of the park and protect its water resources.

Developing the needed coordination with Federal, State, and local agencies leading to the establishment of adequate controls on air and water quality and the scenic and aesthetic values of the surrounding land will be very difficult in light of the extent and nature of the existing zoning and developments now proposed on these lands.

## Resource Protection and Management

At Kaloko-Honokōhau the significance and density of Hawaiian archeological sites and features intermixed with important natural values such as endangered water bird habitat and overlaid with an expanding demand for recreational use foretell that resource management will be a complicated interplay of goals that may sometimes conflict. Further complicating resource management in the park are the rapid changes in land use now occurring on surrounding lands. These developments on adjacent lands and the infrastructure required to support them have great potential to harm resources within the park.

Although there are some gaps in needed baseline resource information, quite a lot is known about the cultural and natural values at Kaloko-Honokōhau. Resource management is ongoing. The removal of alien red mangrove from Kaloko fishpond has received high priority and is now completed. Some mangrove removal is also taking place at 'Aimakapā fishpond, along with selective removal of *kiawe*, another alien plant. Many mangrove seedlings still remain in the park and are constantly sprouting. The effort to eradicate mangrove from the park is ongoing and will likely continue over the next several years. Stabilization and restoration work on the historic Māmalahoa Trail and other important cultural sites has also been carried out.

A resource management plan (1991), the first, has been prepared for the park. Specific cultural and natural resource management issues have been identified and strategies developed for dealing with them. The cultural values connected with Kaloko-Honokōhau are of utmost importance not only because of the significance of the resources found there — i.e., the physical sites and features themselves — but because of the deep emotional significance this particular place has for Hawaiians. This significance is manifested in the spiritual sacredness of Hawaiian burial sites scattered throughout the area and the guardian spirit said to be associated with Kaloko fishpond, and the belief that somewhere in the park the bones of Kamehameha the Great are interred. These intangibles make caring for the park's cultural values and resources especially important. Implicit in this care will be maintaining a special sensitivity to Hawaiian traditions and religious beliefs.

## Visitor Use

Visitors to Kaloko-Honokōhau are certain to increase substantially in the future. In 1988, the first year that visitation figures were kept, about 12,500 visits were recorded. In 1989, visitation to the park had risen to well over 17,000, by 1990 it was 23,600, and by 1991 it had doubled over the previous year to 46,790. During this entire period, the park lacked visitor amenities and still was relatively unknown to the public. Nearly all of the 1991 increase came from beach users of the Honokōhau parcel acquired in late 1990.

West Hawai'i (South Kohala and North Kona) is the principal visitor destination area for the island of Hawai'i. The visitor industry here has become a major source of economic activity and, judging by the number of development projects for new hotels and condominiums, will continue to grow. Too, it is expected that the resident population of the area will be growing significantly in the coming decades as planned major urban expansion takes place.

There has been trespass beach use of the Honokōhau *ahupua'a* lands in the park for many decades prior to the National Park Service's acquiring them. This use was primarily by nude sunbathers utilizing the sand beach next to 'Aimakapā fishpond. Occasionally, some of these visitors walk to the nearby anchialine pond surrounded by large *ahu* (cairns). The water quality in the pond and the archeological features associated with it have been deteriorating over the past several years due to human impacts. Access to the beach has been and continues to be via the Honokōhau Harbor.

Comments received from the public at the scoping meetings related to the future use of the Honokōhau beach were numerous. Out of the more than 900 received, many called for the National Park Service to consider designating the beach at Honokōhau as "clothing optional." Nearly all of these comments came from off-island visitors. A substantial number of comments were received urging that nudity be banned from the beach. The latter came from local residents, many of whom felt this practice to be insulting to the Hawaiian culture.

During the open review period to receive public comment on the draft general management plan/environmental impact statement, this issue came up again. At the public meetings, a total of 19 people spoke in opposition to allowing nude sunbathing at Honokōhau beach. Petitions with a total of 442 signatures were received opposing nude sunbathing. On the other side of the issue, 42 people spoke and a petition with 189 names was received recommending that the National Park Service designate Honokōhau beach as clothing optional.

Up until the National Park Service's acquisition of the Kaloko *ahupua'a* area in 1986, public access was prohibited here. Presently, visitor use consists primarily of interpretive tours of certain areas by park personnel for individuals and groups. Access to the Kaloko area

is presently via a one-car width, unimproved and temporary access road. Most visitors arrive by auto, some after having stopped at park headquarters presently located across the highway.

Preliminary estimates of visitor carrying capacity were projected in the 1974 study report, Spirit of Ka-loko Hono-kō-hau. The daily capacity for the then proposed park was envisioned to be 1,500, with 250 to 350 being the capacity at any one time. This projects that Kaloko-Honokōhau will have more visitors than Pu'uhonua o Hōnaunau National Historical Park and will probably exceed one-half million visitors/year. Little monthly fluctuation in visitor numbers would be expected. The goal of providing a quality visitor experience in keeping with the park's intended purpose will need to involve tempering public access to certain areas; for example, where Hawaiians and others will be pursuing educational and cultural activities, sacred areas such as burial sites, endangered species habitat, and other areas.

## **Park Development and Access**

This is a new park not yet fully operational. No facilities exist on site for resource management, park administration, maintenance, visitor use, sanitation, or interpretation. Some resource management, primarily removing alien red mangrove from Kaloko fishpond and at 'Aimakapā, has been going on for about two years. A temporary chemical toilet near Kaloko fishpond and a composting toilet near Honokōhau beach are the only existing park-related structures. Access to the chemical toilet near Kaloko fishpond is via an unimproved gated service road at the highway end. Access to the composting toilet near Honokōhau beach is via trail beginning at the harbor end of the park. Park offices housing administrative and maintenance activities are presently located across the highway in the Kaloko Industrial Park. Only very limited visitor services are provided here and no interpretation takes place.

No formal road access to Kaloko-Honokōhau off the Queen Ka'ahumanu Highway presently exists. Vehicular access to park lands is either via the entrance road to Honokōhau Harbor to the south or via the unimproved service road to Kaloko fishpond. A few hikers presently enter the park via the coastal trail on Kohanaiki lands to the north. The service road access to Kaloko fishpond is intended to be temporary.

The location of the existing network of unimproved roads, trails, and tracks in the park is unsuitable for providing access to interpret resources for visitors. Moreover, some go through areas where management and protection of certain resources requires controlling visitor use.

At the southern end of the park several small waterfront dwellings are located in the vicinity of the 'Ai'ōpio fish trap. These dwellings have

been on property of the Federal government since 1988 when the Park Service acquired the land. The permittees, who have been residents here for years, have been allowed to maintain their residency under the provisions of individual, non-transferrable, special use permits granted by the Park Service. The continuation of these permits to prior residents for a specific period of time has been carried out by the National Park Service (following a recommendation made in the Spirit of Ka-loko Hono-kō-hau). As individuals choose to leave, the long-term goal is to stabilize and restore this area as the prehistoric Pu'uoina *heiau* and Ai'ōpio fish trap.

The Spirit of Ka-loko Hono-kō-hau discussed needed park facilities in general, calling for the precise location and size of these to be determined after more detailed planning and archeological research. The development concepts discussed in the report consisted of a live-in cultural education center for Hawaiians, an orientation complex for park visitors (parking, a structure and administrative offices), a cultural activities area, wayside exhibits, rest rooms, and a central maintenance facility. None of these now exist in the park.

The locations of these and other needed facilities, including providing adequate and safe visitor access from the highway, have been determined in this general management plan. At issue here is to make certain these facilities are sited so as not to adversely impact the resources of Kaloko-Honokōhau, the tangible and the intangible.

### **Establishment of the Kaloko-Honokōhau Na Hoa Pili O Kaloko Honokōhau (The Friends of Kaloko-Honokōhau)**

As recommended in the study report, Spirit of Ka-loko Hono-kō-hau, the park's 1978 enabling legislation authorized the Secretary of the Interior to appoint a park advisory commission. The commission (nine members, at least six to be native Hawaiian) was to advise the park regarding its "...historical, archeological, cultural, and interpretive programs" and to "...afford particular emphasis to the quality of traditional native Hawaiian culture demonstrated in the park." Section 505(f)(7) of Public Law 95-625 provided that the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission would terminate within ten years of the enactment of Public Law 95-625. Public Law 95-625 was enacted in November 1978. Since more than ten years have passed since the date of enactment of this statute, the National Park Service cannot use Public Law 95-625 as the basis for establishing the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission.

At the public meetings held to scope out general management plan issues, several requests were made to establish the advisory commission. Establishment of the park's advisory commission surfaced again during the review period for the draft plan and environmental impact statement. Public comment was unanimous to

establish the park's official advisory commission, Na Hoa Pili O Kaloko Honokōhau.

Since February 1993, the Department of the Interior and the National Park Service have not been able to sponsor the establishment of an advisory commission for Kaloko-Honokōhau National Historical Park. Executive Order 12838, issued February 10, 1993 and entitled *Termination and Limitation of Federal Advisory Committees*, places restrictions and limitations on all federal executive departments and agencies with regard to sponsoring the continuation or establishment of federal advisory committees. As part of the federal executive branch, the National Park Service must comply with the provisions of this executive order (see Appendix A for the full text).

To address this situation, Congressional representatives have proposed legislation in both the House of Representatives and in the Senate. This legislation has passed in both the House and the Senate. If enacted, it would allow the National Park Service to establish the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission.



## THE PROPOSED ACTION AND PLAN ALTERNATIVES

This chapter discusses alternative strategies for developing, operating and managing Kaloko-Honokōhau National Historical Park in the coming decades. The alternatives deal in varying ways with the issues which are now facing the park. From these alternatives, a proposed action has been selected. The proposed action constitutes the general management plan for Kaloko-Honokōhau National Historical Park.

Kaloko-Honokōhau National Historical Park was established to set aside a place to preserve, interpret, and perpetuate the native Hawaiian culture. The place, Kaloko-Honokōhau, is particularly appropriate for that purpose, having once been a thriving Hawaiian settlement. Within the park are numerous and significant remnants of that settlement. For many, particularly Hawaiians, Kaloko-Honokōhau is also a spiritual place, a place for renewal. The park is to be a place where people will be able to engage in ancient Hawaiian activities and recreate traditional Hawaiian crafts. This renewal and recreating should be carried out in a setting that evokes an image of traditional Hawai'i.

Kaloko-Honokōhau National Historical Park is also to be a place where visitors can come in order to better understand and appreciate the Hawaiian way of life. Consequently, visitor use facilities and access to the park need to be developed, but these developments should not unduly interfere with the park's cultural resources or the creative activities connected with spiritual renewal. The park also

contains significant natural resources such as endangered Hawaiian water bird habitat, anchialine ponds, and nearly one-half of the park area is comprised of the offshore waters of Honokōhau Bay, an important marine resource. Park developments also must not adversely affect these natural resource values.

Future development at Kaloko-Honokōhau must take into account the park's relatively small size, its future urbanized location, and, likely, future heavy use — largely by off-island visitors. For these reasons, on-site development needs to be low-key, and the park's open and natural character maintained as much as possible. A central visitor contact point and vehicular access to the park are needed to structure and guide public use.

A no-action alternative is presented first. This alternative describes the existing situation at Kaloko-Honokōhau — that is, the continuing of present trends and conditions. It is presented to provide a basis for comparison with the "action" alternatives that follow. The no-action alternative assumes the National Park Service will respond to future needs and problems without any major actions or changes. It assumes there will be no development on-site for visitor use, road access, or interpretation. It also assumes a limited capability, because of the small staff, for taking actions to influence decisions made on lands adjacent to the park. The no-action alternative assumes a continuation of existing efforts for resource management, land acquisition, management of State of Hawai'i lands and waters in the park, and the establishment of a park advisory commission.

Following the no-action alternative, three other alternatives are presented, including the proposed action, for the future management, use, and development of Kaloko-Honokōhau National Historical Park. These action alternatives were developed based on the park's authorizing legislation, NPS Management Policies, pertinent NPS guidelines, and the recommendations contained in the 1974 study report, Spirit of Ka-loko Hono-kō-hau. Also, the more than 900 comments received at the public meetings and during the open period to scope out plan issues were utilized in developing these alternatives. The Computer Aided Design and Drafting (CADD) maps containing baseline information on the location of resources, natural and regulatory constraints on development, existing utilities and other pertinent information were utilized to develop those aspects of the alternatives dealing with park infrastructure development.

As a result of the comments received during the public review period for the draft plan/environmental impact statement, the proposed action has been revised, along with other sections of the document.

The proposed action and the other action alternatives differ significantly in the extent and nature of park developments and staffing levels. In other respects, however, the proposal and the alternatives share common actions. These common actions deal principally with the protection and management of park resources and



the provision of basic visitor services. The capability for implementation of these common actions is, however, constrained by the differing staffing levels proposed under the proposed action and the alternatives. The estimated costs of park development for the proposal and the alternatives are shown in later sections of this chapter.

## **No Action Alternative**

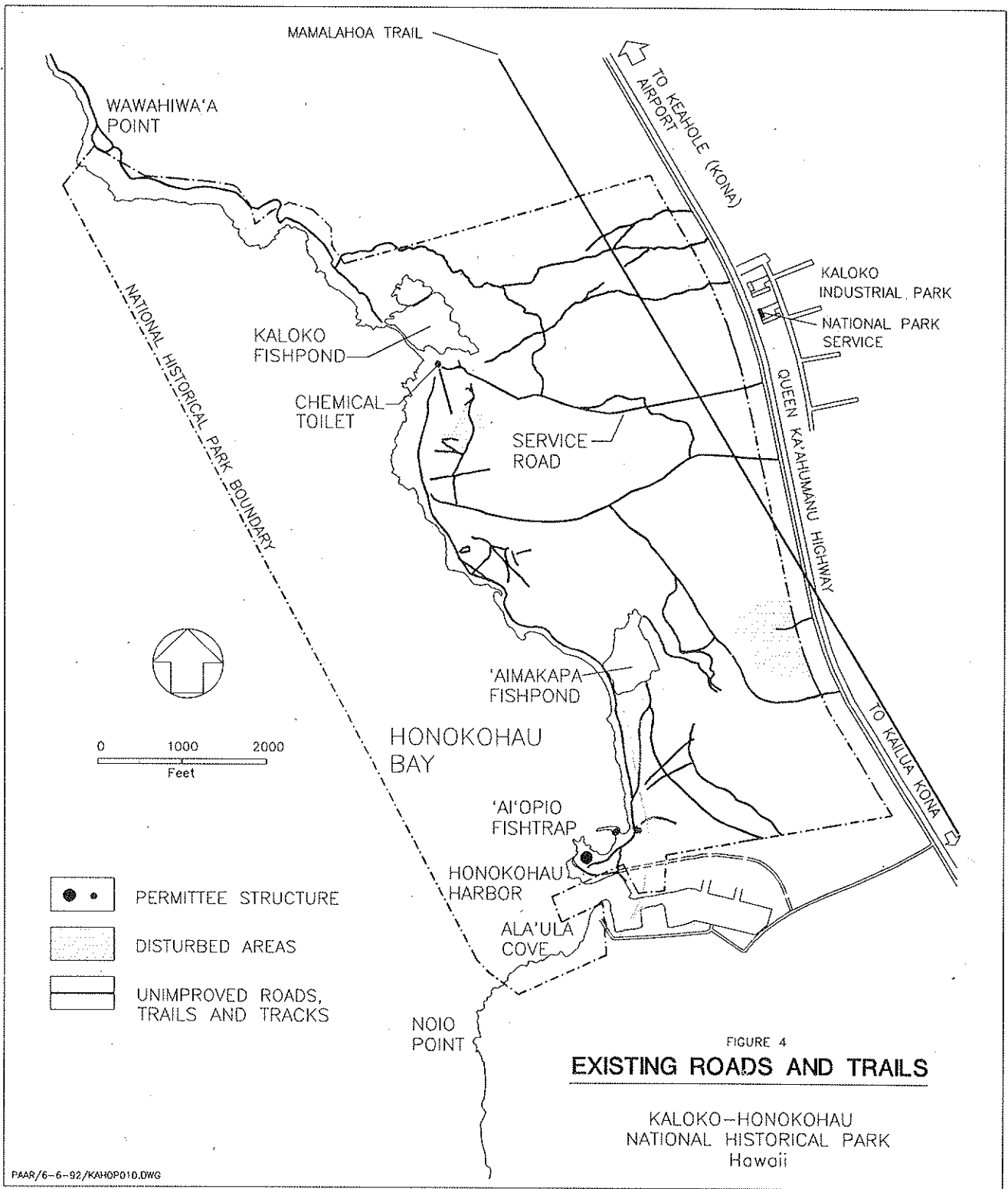
This alternative calls for no significant changes in the existing operation and management of Kaloko-Honokōhau National Historical Park — i.e., a continuation of the status quo. Current operations are to continue. Visitor services are to remain at the same level and use patterns largely unchanged. Under this alternative, there is to be no provision for infrastructure development within the park to provide visitor services. No major capital expenditures are to be made for the construction of facilities for visitor use, access, park administration, and resource management and protection. An appropriate setting will be provided for those who wish to participate, including staying overnight, in Hawaiian cultural activities and recreate traditional Hawaiian crafts. Park staffing is to remain at the existing level. This alternative reflects the views of those who during the public scoping period and during the public review period on the draft plan said, in essence, "leave Kaloko-Honokōhau as it is." The no action alternative will deal with each of the major issue areas previously identified without major actions or changes in course.

Clearly, it would not be possible to merely maintain the status quo in a new and, as yet, undeveloped park. So, even the no-action alternative means that some changes would occur, most of them resulting from the continuation of ongoing efforts to operate the park and protect its resources.

**Park Development and Access.** Under this alternative the existing park headquarters, the leased building spaces in the Kaloko Industrial Park located *mauka* of the Queen Ka'ahumanu Highway outside of the park, are to continue to serve as the location for all park operations — administration, maintenance, and visitor services.

With Kaloko-Honokōhau, a new and undeveloped park, the no-action alternative means that on-site facilities for visitor use, interpretation, or resource management will not be built. There would be no visitor center constructed in the park; no modification of the Queen Ka'ahumanu Highway would take place to provide access; and no cultural activities area would be constructed.

It is possible to provide only very limited visitor services at the existing park headquarters located in the nearby Kaloko Industrial Park. These services presently consist of a small information counter with a modest publication sales/display operated by the cooperating



association. At the present time, a part-time cooperating association employee provides visitors with information about the park and handles the sales of the small amount of brochures, maps, and other publications now available there. There is no parking for visitors and limited opportunities exist for providing any additional parking nearby. The existing rest rooms are not designed for public use and can accommodate only very small numbers of visitors. Park staff also use these rest rooms.

Existing access within the park consists of dirt roads, trails, and bulldozed tracks. Nearly all of these were built over a period of several years by the previous owners. An unimproved dirt road leads from the highway to the sandy area near Kaloko fishpond. Another dirt road is just to the south and runs from the highway towards the coast. Near the southern end of the park, a short dirt road leads to the disturbed area *mauka* of 'Aimakapā fishpond. A portion of the historic Māmalahoa Trail comes into the park from the Kōhanaiki lands to the north and exits on its *mauka* side near the northern end of the Honokōhau *ahupua'a*. A trail runs all along the coastal portion of the park. The remainder consists of shorter, less clearly marked trails and traces. Some of these are ancient and were used by the Hawaiians. These are considered to be cultural resources.

Existing use of unimproved roads, trails, and tracks within the park is to continue under this alternative. The gate controlling access to the existing narrow service road to Kaloko fishpond is now kept open from 8:00 a.m. until 3:30 p.m. daily. At 3:30 p.m. the gate is closed and locked. There is room here for about 20 cars. This road is eventually to be closed to vehicles. Visitors will then be required to park *mauka* of the gate and walk the three-quarters mile to Kaloko fishpond. There is room at the highway end for about ten cars. These cars would be parking on State of Hawai'i lands within the existing highway right-of-way.

Under this alternative, facilities connected with the live-in education and cultural center recommended in the Spirit of Ka-loko Hono-kō-hau would not be built. Those individuals who wish to experience Kaloko-Honokōhau overnight in its Hawaiian setting would apply for a special use permit from the park superintendent. These permits would be issued on a case-by-case basis. Size of the group, due to the absence of any facilities, would be limited. The participants would bring in all equipment and supplies, including water. The disturbed sandy area near Kaloko fishpond is to be the site used. Previous archeological surveys indicated it contains no cultural features. Participants with permits would be allowed to access the site with vehicles via the dirt road. Autos would be parked at the Kaloko fishpond end of the road. There is no potable water at the site. A chemical toilet is located nearby.

The park's boundaries would remain unmarked, unfenced, and unscreened. Under this alternative, composting toilets are to be installed to serve park visitors at Honokōhau beach.

Under this alternative, the existing special use permit arrangement with the residents of the dwellings near the 'Ai'ōpio fish trap is to continue.

**Resource Protection and Management.** Under this alternative ongoing resource management efforts are to continue. The park will continue to deal with the major cultural and natural resource management issues it faces in accordance with strategies contained in the approved resource management plan. However, the park's overall capability for carrying out the required project work needed to implement these strategies will be constrained by the small size of the existing resource management staff and the uncertainty of supplemental funding. Consequently, under this alternative only those resource management projects already funded or those of the highest priority will likely be accomplished.

**Visitor Use and Interpretation.** Visitors wanting information on the park will continue to go to the existing headquarters facility located at the Kaloko Industrial Park, a non-park setting. Under this alternative, visitors who call by phone will continue to be encouraged to first stop at park headquarters to receive directions for accessing the park.

The park's major interpretive theme — to give visitors a basic understanding and a glimpse of the ancient Hawaiian lifestyle through cultural demonstrations and orientation sessions — would be extremely difficult, if not impossible, to carry out at the present headquarters location. Also, visitors would have no opportunities to actually participate.

Under this alternative, Kaloko-Honokōhau is to continue as a day-use park. The park's interpretive facilities would consist of existing guided tours, plus the installation of wayside exhibits along some of the existing trails and unimproved roads.

The existing service road to Kaloko fishpond will continue to be used by visitors on foot. The arrangement for guided interpretive tours of the park is to continue. These tours are scheduled in advance and consist of a park interpreter meeting visitors at the entrance gate to the dirt road leading to Kaloko fishpond. Under this alternative, there is potential for visitors disturbing participants staying at the nearby site designated for limited overnight use (in place of developing a live-in cultural education center). Also, the continued use of the dirt road will place an increasing number of park visitors in close proximity to the nearby Hawaiian burial sites.

Under this alternative, visitor access to Kaloko-Honokōhau is to continue to be via the narrow, unimproved, unmarked dirt road to Kaloko fishpond, the existing Honokōhau Harbor entrance road (Kealakehe Parkway), and the coastal trail coming from Kohanaiki lands to the north. As noted, no major access is to be developed from the Queen Ka'ahumanu Highway and no visitor parking is to be constructed. Visitors will continue to go to park headquarters across the highway for information. Under this alternative, the several points of uncontrolled access to the park along the Queen Ka'ahumanu Highway would continue to exist.

The existing unimproved road to Kaloko fishpond as a park entry point is accessible only to vehicles traveling southbound on the Queen Ka'ahumanu Highway. Visitors traveling northbound on the highway would have to cross the double yellow lined highway to enter the park here. No formal, marked access now exists here. Those visitors who call in advance will continue to be guided as a group by a park interpreter.

Under this alternative, as visitation to the park increases, greater numbers of visitors will be accessing the park via the Honokōhau Harbor. The existing sand beach at Honokōhau will continue to be a major attraction for recreational sunbathers. The existing harbor entrance road is the only existing formal access to the park from the Queen Ka'ahumanu Highway. It is the sole means of safe access to the park for northbound traffic coming from Kailua town. Presently, the Honokōhau Harbor entrance road is used by park visitors heading for Honokōhau beach. Peak use of the beach is on weekends.

The potential for expanding parking at the harbor for park visitors is extremely limited. This facility will soon be overwhelmed as Kaloko-Honokōhau becomes more well known. Under this alternative, as visitation to the park increases, visitors will likely begin to park their cars along the *makai* shoulder of the Queen Ka'ahumanu Highway on the State's right-of-way.

Presently, only a very few visitors access the park via the existing trail on Kohanaiki lands to the north. If the resort-residential development proposed on the Kohanaiki lands proceeds, the number of visitors accessing the park from this direction will likely increase. Without any marking of the park's northern boundary, visitor access will continue to be uncontrolled here.

Existing use patterns are to continue under this alternative. Organized interpreter-led park tours will continue to begin at the entrance gate to the dirt road to Kaloko fishpond. A park interpreter now meets visitors at the gate for a prearranged tour of the park. A single roving ranger will also continue to provide visitors with interpretive services and assure their safety. The number of requests the park receives for tours, now primarily from local schools, is increasing at a rapid rate and soon will exceed the capability of the existing staff to respond.

**Completion of Land Acquisition.** Under this alternative, the National Park Service will continue its ongoing efforts to acquire a sufficient interest in the 18-acre parcel of privately-owned land within the park located on the coastal portions of the Kohanaiki *ahupua'a* to adequately protect the resource values there and on adjacent park lands and waters.

**Management of State Lands and Waters Within the Park.** Under this alternative, the National Park Service will continue its efforts to lease State of Hawai'i lands within the park near Honokōhau Harbor and along the Māmalahoa Trail corridor. The National Park Service will continue to seek designation as a marine fisheries management area or a marine life conservation district by the State of Hawai'i for the park's offshore waters. The National Park Service, because of the small existing staff, will have only very limited capability to undertake the management of any State lands and waters within the park.

**Adjacent Land Uses.** The National Park Service, in seeking to influence adjacent land uses by utilizing the *ahupua'a* concept, will, of necessity, have to assume a reactive rather than proactive role under this alternative. At existing staffing levels, the capability of the park to undertake needed baseline data gathering, research, and monitoring is very limited. The superintendent, in determining how existing and proposed land and water uses effect on the park, will have to rely to a great extent on outside sources for information. Consequently, the National Park Service will be actively involved in attempting to influence and mitigate only those adjacent uses which will clearly and obviously have a detrimental effect on park resources. Often, this involvement likely will be after the fact.

**Establishing the Kaloko-Honokōhau Na Hoa Pili O Kaloko-Honokōhau (The Friends of Kaloko-Honokōhau).** Section 505(f)(7) of Public Law 95-625 provided that the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission would terminate within ten years of the enactment of the enactment of Public Law 95-625. Public Law 95-625 was enacted in November 1978. Since more than ten years have passed since the date of enactment of this statute, the National Park Service cannot use Public Law 95-625 as the basis for establishing the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission.

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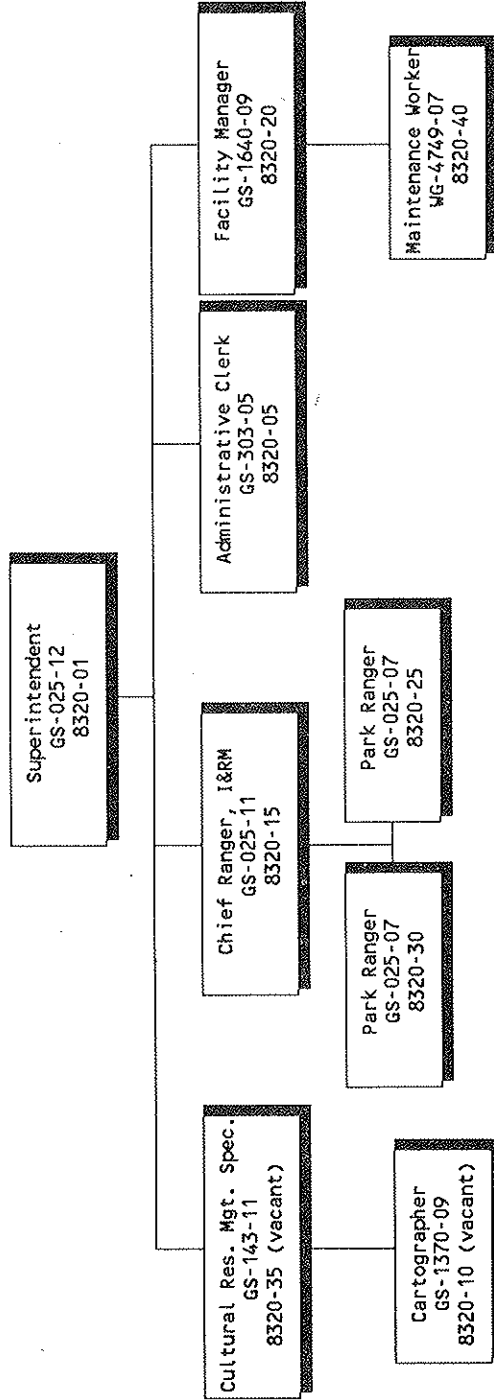
To address this situation, Congressional representatives have proposed legislation in both the House of Representatives and in the Senate. This legislation has passed in both the House and the Senate. If enacted, it would allow the National Park Service to establish the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission.

**Management Zoning.** Kaloko-Honokōhau does not yet have a prescribed management zoning system. Under this alternative, management zoning would continue to be as described in the park's Statement for Management (1988), which calls for all lands in the park to be zoned Historic and all of the park's offshore waters plus the three fishponds to be zoned Natural.

**Estimated Development Costs.** The no-action alternative calls for no major expenditures to construct on-site facilities for visitor use, access, park administration, and resource management.

**Operation and Maintenance.** The yearly costs required to fund staff for continuing the existing levels of operation and maintenance are approximately \$475,000.

**Park Staffing.** Under the no-action alternative, staffing is to remain at the existing level; i.e., limited to those permanent positions already filled and those authorized.





## Proposed Action (General Management Plan)

The proposed action will lead to the development of needed facilities in the park, but will seek to carefully locate and limit construction. Facilities built in the park are not to unduly interfere with the natural and historical character of the landscape or be inconsistent with perceptions of what traditional Hawaiian cultural landscapes looked like. They are to be located so as to not interfere with traditional Hawaiian activities taking place in the park. Only those facilities needed for the protection of park resources, the provision of visitor services, and the perpetuation of the traditional Hawaiian culture are to be built in the park. The proposal calls for the park's existing administrative and maintenance operation at the Kaloko Industrial Park to be phased out as new facilities are built in the park.

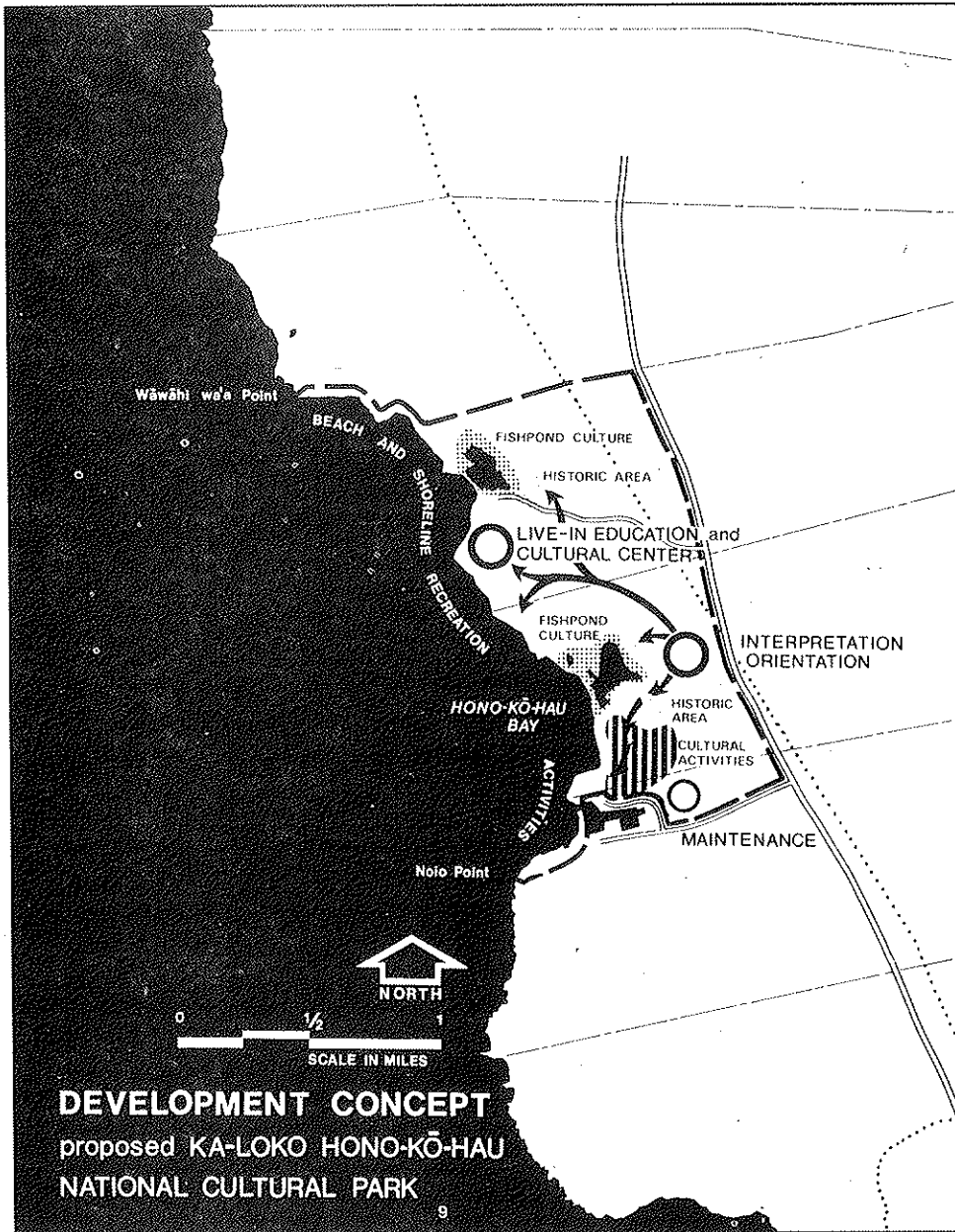
The proposal is based on the development concepts recommended in the 1974 study report, Spirit of Ka-loko Hono-kō-hau. These concepts are illustrated in the graphic appearing on the following page, shown as it appeared in the 1974 report. The proposal is in accord with the intent of the park's authorizing legislation, complies with environmental, historic preservation and other applicable laws and is consistent with all approved park plans. It addresses the development and use issues that were identified during the scoping public meetings. As much as possible, the proposal seeks to keep park developments located on *mauka* lands near the highway and away from the cultural and natural resources found in the park. Locating the proposed visitor use and park operational facilities in the southeast corner of the park near the highway also permits the rest of the park area to be used to carry on traditional Hawaiian activities, undisturbed by the great majority of visitors and normal park operations.

**Park Development and Access.** Kaloko-Honokōhau is presently undeveloped, lacking the infrastructure needed to carry out the legislative intent for its development and use by visitors. The study report, Spirit of Ka-loko Hono-kō-hau, provides the following direction for the style of park development: "the architectural character of the park building complex should possess a timeless quality by blending in with its surroundings."

The proposed orientation center is to function to provide basic information and orientation for visitors to the park. Artifacts and crafts used by Hawaiians in constructing and tending fishponds, farming, canoeing technologies, and related ceremony are to be displayed and interpreted here. The display of these would be integral to interpreting the geography and culture of Kaloko-Honokōhau. There could also be display and interpretation of such crafts and art by contemporary artists and artisans.

Other related functions at the orientation center would be as a Hawaiian library and research laboratory; as a museum for collections related to this place and Hawaiian culture; and as a repository for

Hawaiian archeologic and ethnographic collections. In addition, it would function as an office space for park interpreters, rangers, resource management staff, the park's science program, as well as administrative operations. It would also serve as a storage area for publications, search/rescue equipment, first-aid, and supplies.



The Spirit of Ka-loko Hono-kō-hau study report recommended the general locations shown here for use activities and visitor/operational facilities in the then proposed park.

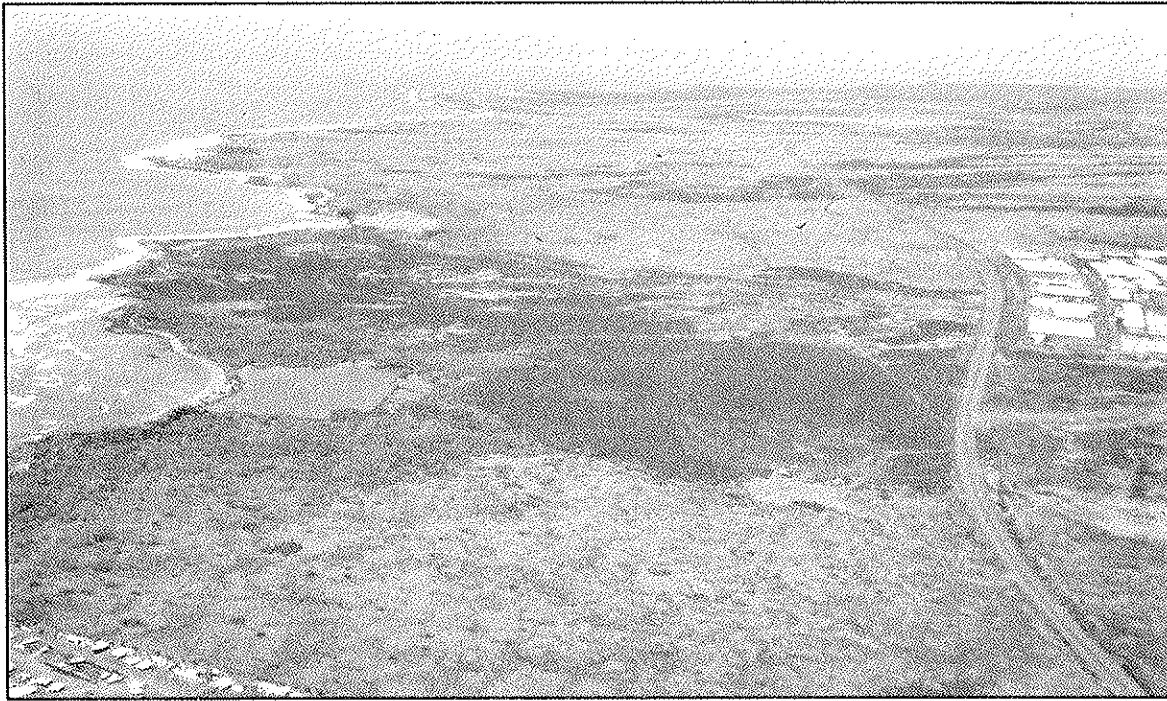
The general management plan is to identify the appropriate location for the proposed orientation center, its functions, and the amount of space needed to carry out those functions. Detailed and specific design configuration for the orientation center will take place following plan approval and will be carried out in consultation with the park's advisory commission.

The most suitable location for the orientation center is on a portion of an 'a'a lava flow already disturbed (bulldozed for a borrow pit to construct the highway) *mauka* of 'Aimakapā fishpond. This site is level, close to the highway, and far enough from the coast so as to not be affected by storm waves or tsunamis. Also, siting the proposed orientation center down low in the borrow pit means it would not be visible from other areas in the park and consequently not be a visual intrusion on the rugged, primeval surroundings. An objective of the Spirit report was that the orientation center be located and designed so as to be invisible from the remaining portions of the park.

The site for visitor facilities proposed in the Spirit of Ka-loko Hono-kō-hau report is up on the top of the lava flow at its *makai* edge. This site was chosen primarily for the excellent view of the coastline and its ocean breezes. This location and the surrounding area, however, are now known to contain numerous and highly significant cultural features, and therefore judged to be inappropriate as a major development site for a visitor center building.

Visitor parking is to be located adjacent to the orientation center on the *mauka* side nearest the highway. A park entrance road will connect the visitor parking area with the highway. A total of about four acres is to be taken up by this entire development. No cultural sites or features are known to exist here.

Rest rooms are to be accessible to visitors from both inside and outside of the building. Nearby, an amphitheater is to be constructed for daytime and evening interpretive programs. Total area needed for the center, including the amphitheater and a viewing deck, is estimated to be about 13,000 square feet. The size of the center is to be large enough to accommodate up to 300 visitors at one time. Major portions of the building will need to be air-conditioned. The amphitheater to be located nearby is to be left open, but covered and sited so as to take maximum advantage of breezes. A covered viewing deck is to be built on top of the 'a'a lava flow, sited so as to avoid any cultural features. Access to the deck is to be via stairways built on the *makai* side of the orientation center. From the viewing deck boardwalk trails will be built on top of the lava flow parallel to its *makai* edge and looping back to the visitor orientation center. Foot trails from the boardwalk will lead to the *mauka* side of 'Aimakapā fishpond. Other trails would lead to the *holua*, archeological features, and the coast beyond.

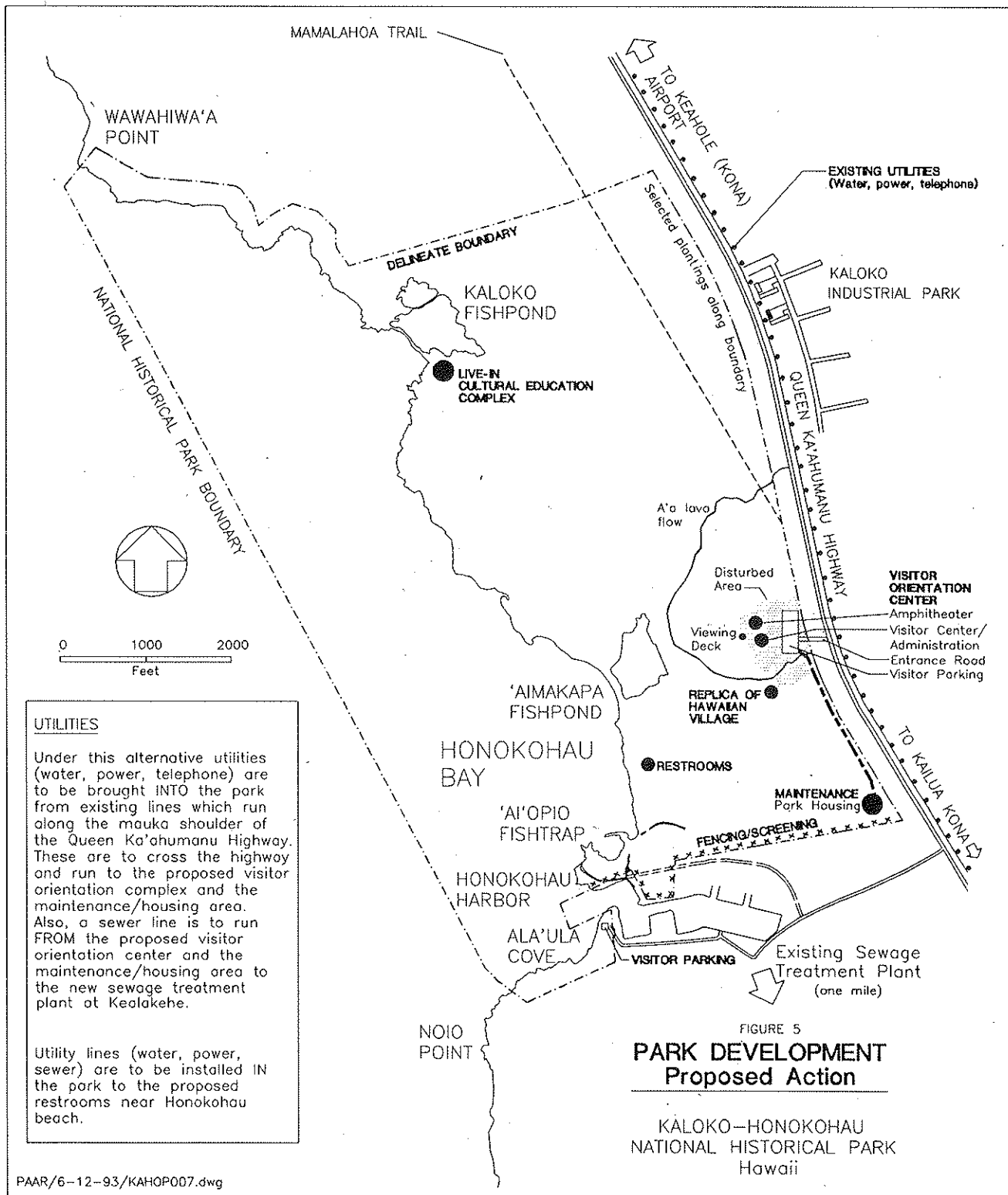


The site proposed for Kaloko-Honokōhau's visitor orientation center is on an already disturbed portion of the 'a'ā lava flow next to the Queen Ka'ahumanu Highway. The existing park headquarters facility, located in the nearby Kaloko Industrial Park, is to be phased out.

The park's administrative offices are to be located adjacent to the visitor orientation center. Office spaces will be needed here for the park superintendent and staff. A staff rest room, meeting room, and storage space will also be needed.

When designed, the main building and amphitheater should be in keeping with the year-round, warm, dry, semi-tropical climate, consistent with structures built in ancient Hawai'i, and unobtrusive blending in with the surrounding terrain with minimal disturbance of the nearby ground surface. Both structures will be designed to be fully accessible to disabled and elderly visitors. Although these structures should be consistent in style with the architecture of the ancient Hawaiians, they should not be designed and built as replications, but rather should be clearly distinguishable as modern buildings.

The site of the proposed visitor orientation center is on a portion of an 'a'ā lava flow that has been bulldozed in the past. Consequently, the ground surface here and on the surrounding lands, about 15 acres in all, has been disturbed. Nonetheless, the lack of tree cover in and around Kaloko-Honokōhau makes it especially sensitive to visual impacts from park developments. Site restoration, including some landscaping around the orientation center and the parking lot, will be needed. Appropriate native vegetation will be used for landscaping.



Requirements for water, sewage disposal, and electrical utilities at Kaloko-Honokōhau are based on an estimated maximum capacity of up to 300 visitors in the park at any one time. Utilities will need to be provided at the visitor orientation center. Overhead power transmission lines (69 kV) now exist along the *mauka* side of the Queen Ka'ahumanu Highway and another, a 12 kV line coming from Kailua town, ends at the southern boundary of the park. The Hawaii Electric Light Company is planning to expand its generating capacity for West Hawaii by building new facilities near the Ke-āhole Airport and constructing a new 69kv transmission line between the Ke-āhole facility and Kailua town.

A telephone line runs along with the power lines. There are three (12", 16" and 18") county water lines running along the *mauka* side of the highway and an 8" feeder line services the Honokōhau Harbor. These utility lines are all located only a short distance away from the proposed orientation center site, but would need to cross the State-owned Queen Ka'ahumanu Highway right-of-way to enter the park. These utility lines would cross under the highway. Concrete casings would be used to run the utilities under the highway. At the appropriate time, detailed plans will be submitted to the State Division of Highways. All utility lines in the park (water, sewage, and electricity) would be underground.

The width of the State's highway right-of-way for the Queen Ka'ahumanu Highway next to Kaloko-Honokōhau is about 300 feet, with the existing road pavement taking up about 100 feet on the *mauka* side. An easement from the State will be needed for access and utility purposes across these lands.

Rather than treating liquid wastes on-site by constructing a park sewage treatment plant, it would be more cost-effective to hook up with the new sewage treatment plant. Construction of a major sewage treatment plant has been completed on State-owned Kealakehe lands just south of the park. The plant is, however, not yet operational. The plant is to be operated by Hawai'i County. The park's sewer lines will need to be hooked up with new lines. To accommodate planned future development, new sewer lines will be placed along the Queen Ka'ahumanu Highway.

The main visitor parking area, with spaces for 200 to 250 vehicles (cars and buses), is to be constructed adjacent to the orientation center. The parking area is to be paved and configured to contain planting islands and walkways. Low lava rock wall barriers, which would also act as screens, are to be installed around the perimeter. Access from the highway to the parking lot is to be via the proposed park entrance road. Delineated pedestrian walkways will lead visitors to the orientation center.

The separate site proposed for the park's maintenance facility is located to the south of the visitor orientation center. No cultural

resources are known to exist here. Again, the maintenance building is to be designed so as to blend in with the surrounding terrain and be consistent with the Hawaiian style of architecture. These facilities will be sited away and screened from the entrance road and from visitor activities at the orientation center. Due to its location in the extreme southeast corner of the park, this facility would not be visible from anywhere else in the park. The location identified for the park's maintenance facility in the Spirit of Ka-loko Hono-kōhau report is outside of the park's authorized boundary on State of Hawaii lands now being used for harbor related activities and is unavailable.

The maintenance facility is to consist of a central work area, office space, storage/supply area, locker room/rest room, a garage or covered parking shed, and a paved parking area. The maintenance facility will need to be surrounded by a chain link fence, with a sliding gate for vehicle access. Utilities will need to be run to the maintenance facility. The structure is to have a low elevation (under 20 feet). Total area required for the park maintenance facility is estimated to be about 4,000 square feet. About one-half of that area will be needed for the park's rolling stock.

Near the maintenance facility, a single park housing unit is proposed. A single Government furnished quarters will be provided to permit 24-hour security at the park.

Additional visitor parking is proposed on the parcel of State of Hawai'i lands south of the entrance to Honokōhau Harbor, pending the finalization of agreements with the State for the National Park Service to manage these lands. Parking is proposed here to allow visitors access to the cultural sites and the white sand beach here.

As mentioned, in order to connect the proposed park entrance road to the existing Queen Ka'ahumanu Highway, it will be necessary to cross the right-of-way owned by the State of Hawai'i. Modification of the existing highway will be needed here to provide visitors with safe vehicle ingress and egress to the park. A fully channelized T-intersection with deceleration, acceleration, and turning lanes will be needed with control at the intersection. Acceleration and deceleration lanes on the existing highway will be needed for both northbound and southbound traffic. All proposed work within the highway right-of-way will be subject to the review and approval of the State Division of Highways.

The Hawai'i Department of Transportation (Highways Division) is planning to upgrade the existing Queen Ka'ahumanu Highway between the Keāhole Airport and Kailua town. The State's plans to widen the highway next to the park fall within the existing 300 foot right-of-way. As part of the Kealakehe Planned Community to be developed by the Hawai'i Housing Finance and Development Corporation, long-range plans call for the Queen K'ahumanu Highway to become a freeway, with a major grade-separated interchange to be constructed just south of the park. The planned freeway will include

the construction of a frontage road system on both sides. If and when the State carries out its plans, the upgrading would provide an opportunity for access to the park via the frontage road on the *makai* side of the freeway. Access via the frontage road offers a safer, more low-key, less intrusive way of bringing visitors into the park.

Other than the main entrance road to visitor parking across the already disturbed area there are to be no roads constructed in the park. Kaloko-Honokōhau's relatively compact land area (approximately a square mile) allows visitor access to major park attractions to be via foot trail. A trail system is to be developed park-wide to provide visitor access to the park's cultural and natural attributes. These interpretive trails are to be self-guiding. The system is to be constructed to NPS standards and be accessible to all visitors (except that only certain trails are to be made fully accessible to the elderly and physically disabled visitors). Directional signing and wayside exhibits are to be placed at appropriate points along the trails; shaded rest stops are also to be provided.

As noted, there is an existing network of unimproved dirt roads, trails, and bulldozer tracks to nearly all parts of the park area. Wherever feasible, these existing unimproved roads, trails, and tracks are to be developed and utilized as interpretive trails for visitors and/or for normal park maintenance and resource management activities. Those trails or tracks not needed for park related purposes are to be closed off to visitors. Additional trails may have to be built to provide needed access to park attractions or to avoid certain sensitive areas.

Extending from the proposed viewing deck on top of the 'a'ā flow, a boardwalk is proposed to provide visitors with safe and easy access to the nearby cultural and natural attributes. From the boardwalk a foot trail is to be built leading down to the existing path running along the *mauka* side of the 'Aimakapā fishpond. Along this path visitors will be able to view the impressive walls and dikes built here by the ancient Hawaiians. Nearby, a blind is proposed to allow visitors to observe, but not disturb, water birds feeding on and around the fishpond. Visitor use of this path and blind will be structured so as to not adversely affect endangered waterbirds. Near the end of the existing path, a trail is proposed to bring visitors back up to the boardwalk, which is to continue, looping around back to the visitor orientation center.

The Spirit of Ka-loko Hono-kō-hau calls for providing a place for those who wish to actively participate in in-depth cultural pursuits. Accordingly, the proposal in this plan calls for a live-in cultural education complex to be developed. The complex is to be composed of clusters of interrelated and interconnected parts (*kauhale* and *halau*), including working areas, meeting areas, educational areas, living areas, and ceremonial areas. It is described in the Spirit of Ka-loko Hono-kō-hau as a facility designed primarily for native Hawaiians, removed from any major public use area, and providing



the opportunity for an intimate personal experience extending over a period of one day or more.

The complex is to be the setting for the practice and perpetuation of Hawaiian traditions; where the Hawaiian customs and traditions — music, art, language, dance, religion, and crafts — can take place, be studied, and be entwined with the more tangible aspects of the culture; together forming a vignette of the total fabric of ancient Hawaiian life. It is to be a place where Hawaiians of today can come to teach others and learn more themselves about their customs and traditions. The complex would allow participants, Hawaiians and others, to learn about and recreate aspects of the life of those who lived at Kaloko-Honokōhau centuries ago. It is also to be a place where ceremonial gatherings or meetings can take place on special occasions.

The complex is to be sited away from any major public use area — the cultural activities going on here are not to be put on view, unless the participants themselves so desire. Classes would be conducted outdoors or in a *halau*, with enough working space and shelters for activities such as Hawaiian canoe building and other traditional Hawaiian practices to take place nearby. These activities would be ongoing and continual — all part of what might have gone on in a coastal Hawaiian settlement. They would emphasize the Hawaiian's use of the land and the sea; revival of traditional uses of native plants, especially those needed for food, medicinal and ceremonial purposes. In addition, a site will be provided and developed for short-term, live-in accommodations. Any structures built here are to be as authentically Hawaiian in design and construction as possible.



At this open and sandy area near Kaloko fishpond, the park's live-in cultural education complex is proposed. Based on previous archeological surveys, the site is known not to contain any cultural sites or features.

This live-in cultural education complex needs to be located at a site which the Hawaiians might have chosen to create an atmosphere of the past. It needs to be near the sea and have easy access to a fishpond so that participants can engage in traditional subsistence fishing activities. Moreover, the complex should be close enough to the existing rock wall enclosures so that participants can also engage in subsistence horticultural activities.

An appropriate site is the sandy, partially disturbed area once occupied by the former owner's caretaker's trailer near Kaloko fishpond. A chemical toilet has been installed at the site and it is now occasionally used for visitor parking. This site is some distance from the proposed visitor orientation center, the park's major public use area. Based on previous surveys conducted on the Kaloko portion of the park, no archeological sites or features are known to exist in the sandy area. There is, however, the wall which once delineated the limits of the house yard of one of the fishpond caretaker's houses. The wall could now be used to delimit the live-in cultural education complex so that park visitors would not inadvertently intrude on the activities going on within.

The location proposed for the live-in cultural education complex differs from the site recommended in the Spirit of Ka-loko Hono-kō-hau. In the period since the study report was released in 1974, additional information has become available about the park's archeology. The previously proposed location is now known to contain 25 recorded archeological sites, including a *heiau* and a major, high-status habitation site that has been dated to A.D. 1400. The 1974 location proposed for the development of a live-in cultural education complex is therefore no longer suitable for development.

Once again, the purpose of this plan is to identify the most suitable location for this facility, define its purpose, and the amount of space needed. The facility's design and the activities that take place here will need to be carefully planned, designed, and constructed by knowledgeable persons. The park's advisory commission should play a major role in this process.

The development of this particular facility is to be guided by asking what the Hawaiians might have built here. Whatever is developed here needs to be based on who is to use the site, what their needs will be, and what activities are to take place there. Whatever is constructed needs to be as authentically Hawaiian as possible — the live-in accommodations are to closely resemble those found in old Hawai'i. Developments in the complex are to be separated to retain the open nature of the site and to allow different activities to go on there at the same time. The live-in accommodations are proposed to be low key and modest (25 persons maximum). The entire complex itself would encompass no more than two acres. The construction here of any modern amenities are to be kept at the minimal level and carried out only to the extent that their provision serves to prevent damage to park resources such as fishponds and the offshore waters.



(Rex Nan Kivell Collection, National Library of Australia, Canberra)

Reproduced here is a sketch by the English artist, John Webber. Done in 1778, it has been described as "probably the most faithful representation of a Hawaiian settlement at the time of European contact that exists today."

No utility lines are to be run to the live-in facility. Instead, composting is to be utilized as the waste disposal system. The proposed 25-person maximum as the capacity makes a composting system feasible. An aerobic or oxygenated system should be used. Since the composting process is to take place in a contained system, wastes will not reach the substrate. Water is to be hauled in on ATV trailers over designated park trails from the visitor orientation center. An enviro-transpiration system is to be utilized at the live-in complex to capture and dispose of the "gray" water generated there. Holding the capacity here to 25 would permit this type of a system to be utilized.

Participant access to the live-in cultural education complex is to be via trail from the orientation center. No autos are to be allowed here and no parking facilities are to be developed. The proposal calls for the existing unimproved road to Kaloko fishpond to be closed off to vehicles. The trail proposed from the orientation center to the live-in cultural education complex is to be made ATV accessible. Most participants will be expected to come into the area by trail on foot. The hike (approximately one mile) on a developed trail across the lava fields will permit participants time to experience a spiritual transition from the crowds expected at the orientation center to the relative serenity and solitude of the live-in cultural education complex and the surrounding area. Supplies and materials needed by the participant are to be brought in via trail on ATV's operated by the National Park

Service. The ATV's are also to be used by the Park Service to carry out resource management activities nearby.



This detailed drawing of a Hawaiian farming community by Thomas Heddington was done in the late 18th century. Feher's *Hawaii: A Pictorial History* describes it as an "arcadian view of a village on the island of Hawaii" that "idealized native life in time of peace."

The live-in cultural education complex is to be operated by the participants, under regulations and guidelines developed by the superintendent and the members of the park's advisory commission. The participants are to be responsible for maintenance and upkeep of the facilities at the complex.

Traditional Hawaiian activities such as tending fishponds, subsistence shoreline fishing, and subsistence horticulture are to take place nearby, but outside of the complex. An exception to the National Park Service policy prohibiting use of actual cultural sites would need to be made to allow traditional Hawaiian aquaculture to take place in the fishponds. Another exception would be to allow the growing of traditional Hawaiian crops within existing rock wall enclosures located nearby and used for that purpose in the past. Although numerous, these enclosures were probably supplemental to the larger scale subsistence agriculture which took place on the *mauka* lands of the Kaloko *ahupua'a*. Compliance with sections 106 and 110 of the Historic Preservation Act of 1966, as amended, will be necessary prior to initiating such use of the park's cultural resources.

The remaining node of development proposed in the park is to be construction of a copy of small Hawaiian settlement for interpretive purposes. At Kaloko-Honokōhau, other than rock platforms and some foundation outlines, no fabric of the original settlement exists, nor do

we know of the existence of historic documents which accurately describe that settlement. These would be required before any reconstruction could take place. Further, Bishop Museum and National Park Service professional archeologists caution that prehistoric sites, if at all possible, should be left "as-is," unless threatened with immediate destruction or degradation. They advise that, in general, efforts to reconstruct or recondition sites for interpretive purposes destroys or seriously diminishes their archeological value.

To meet the intent of Public Law 95-626 and the concerns of professional archeologists, construction is proposed (as authentically as possible) of a small village area near the proposed visitor orientation center. The proposed village is to be new construction and will not be a reconstruction or reconditioning of a known prehistoric site in the park. The purpose of this construction is to provide visitors with the opportunity to learn what a Hawaiian village may have looked like at a location close by the proposed visitor orientation center. It is therefore not intended to be an authentic location; i.e., one the Hawaiians would have chosen. The construction of this facility for interpretive purposes at the selected site makes it possible for participants at the live-in cultural education complex to engage in in-depth Hawaiian cultural pursuits in an atmosphere of relative solitude and quiet. The site selected for the replica village does not lie directly on any known cultural sites.

This development is to consist of modest structures to replicate what a traditional Hawaiian settlement looked like. Since the Hawaiian live-in area is not intended for interpretation and the general public, the village replica is the interpretive place to meet the intents of Public Law 95-625 and the Spirit of Ka-loko Hono-kō-hau report. The entire development would be about an acre or less. Access will be by trail from the visitor orientation center.

Cultural and living history demonstrations would be staged here for the appreciation and education of the visitor. Visitors would have the opportunity to participate as well as to observe. There is to be a display area here for items produced at the proposed Hawaiian cultural education complex.

Construction of a new village as a replica of what an Hawaiian settlement may have looked like is consistent with the NPS policy that there is to be no reconstruction of prehistoric or historic ruins. The new village would not be a reconstruction, or a reproduction on-site to replicate absent original resources. Rather, the village would replicate as accurately as possible, based on the limited information available, what might have existed somewhere else in the park in earlier times.

No new developments proposed in the park are to be construed as reproductions of what existed at Kaloko-Honokōhau when it was a Hawaiian settlement.

Fencing is proposed along portions of the park's boundary to protect resources and guide visitor use. The present southern boundary of the park is next to the facilities and activities of the Honokōhau Harbor. To ensure that the park boundary is clearly marked so no future encroachment of harbor related developments onto park lands occurs, a fence is needed here. The proposed fence is to run from the highway end of the federal property line *makai* along the park boundary out to the shoreline. Plantings will be required here to screen the harbor developments and activities. Native vegetation or Polynesian introductions are to be used. A gate will be provided at the existing park access path from the harbor to permit ingress and egress by the permittees residing in the waterfront dwellings near the 'Ai'ōpio fish trap. A suitable opening for pedestrian access for visitors to the park needs to be provided next to the gate.

The park's northern boundary needs to be clearly marked. The purpose of the delineated boundary is not to discourage access to the park from Kohanaiki lands, but rather to prevent indiscriminate access here which has the potential to do damage to archeological sites and features known to exist in the vicinity. Visitors from nearby Kohanaiki lands would be guided toward the coast. A park trail connected to the existing coastal trail is to be constructed to go around the *mauka* side of Kaloko fishpond and return to the coast south of the site of the proposed live-in cultural education complex (see Figure 6).

The *mauka* boundary of the park need not be fenced, but will also need to be marked. Selected plantings are proposed along the *makai* side of the highway right-of-way to screen out highway traffic. The type of plantings should be in keeping with the park's purpose. At those points where vehicular access onto park lands is now possible from the adjacent highway, barriers (large rocks or fences) need to be installed.

Appropriate species and locations for these and other plantings are to be spelled out through the later development of a separate landscape management plan for the park.

Visitor rest rooms are needed near the coastal portions of Honokōhau to accommodate recreation users at the sand beach. The rest room are to be sited near enough to the sand beach at Honokōhau to be convenient, but at a sufficient distance and screened so as to not be visually intrusive. Visitor use statistics have been recorded for the Honokōhau beach area only since January 1991. During this period it has become apparent that the beach is receiving a heavy amount of use, particularly on weekends. Use reports indicate that nearly three quarters of total visitor use for the park occurs at Honokōhau beach. Long-term requirements for health and safety as well as resource protection call for the underground installation of utility lines (sewer, water, electrical) running from the proposed visitor orientation center to the rest rooms proposed near the beach. Trenches will be needed

to underground utility lines. Two will be needed — one for the electrical line and the other for the water and sewer lines. The trenching for utility lines would follow the route of the proposed trail from the orientation center.

The non-historic dwellings located in the park near the 'Ai'ōpio fish trap are proposed to continue to exist there under the provisions contained in five-year special use permits issued in 1988 to the individuals living there. This arrangement is in accord with the 1974 study report, Spirit of Ka-loko Hono-kō-hau which says that families who reside within the proposed park should be allowed to remain "for a specific period of time which will be determined through negotiation."

The structures here are to be maintained in their present condition by the existing permittees. No expansion of facilities may take place and restrictions related to protection of park resources, sanitation, and visitor safety are to apply. No individuals may reside there other than those who are long-term and permanent residents. All must be on a National Park Service special use permit (five-year maximum). The intent of the National Park Service is to renew these permits at the end of the five-year period.

**Resource Protection and Management.** The Spirit of Ka-loko-Hono-kō-hau study report states that the park's resources have aesthetic, cultural, archeological, historic, and scientific value, and describe them as an irreplaceable public trust. The report's recommendations for resource preservation include establishing a monitoring system for water quality for the park's offshore waters, fishponds, and anchialine pools; eradication of exotic vegetation and animal life; restoring native vegetation; and maintaining the privacy and sacredness of burial sites. Further, the report calls for the clearing of the undergrowth at Kaloko fishpond and the restoration of 'Aimakapā to the extent that the wildlife inhabiting the pond will not be adversely affected.

The Spirit report also discusses the implementation of a program to analyze and determine which archeological sites within the park should be left alone, stabilized, or restored. Kaloko and 'Aimakapā fishponds were specifically mentioned for restoration to permit their future use for fish production. 'Aimakapā, however, is to double as a wildlife sanctuary.

A major objective of resource management at Kaloko-Honokōhau is to provide and maintain the resources needed for continuing education, enjoyment, and appreciation of traditional native Hawaiian activities and culture by local residents and visitors. The overall goal of resource management is not only the protection and preservation of individual archeological sites and features, but also traditional use of certain of these cultural resources. Resource management also calls

for preserving the intangible resources which embody the spirit of Kaloko-Honokōhau.

Resource management at Kaloko-Honokōhau is complicated by the park's future status as an island of protected open space in the midst of an expanding urbanized area. Threats to the resources of Kaloko-Honokōhau have the potential to become increasingly external, originating on lands adjacent to the park.

A resource management plan (RMP) has been prepared for Kaloko-Honokōhau National Historical Park. The plan was approved in March 1991 and deals with both cultural and natural resource management issues; first identifying issues facing the park, then providing strategies for dealing with each of them. These strategies for resource management have their basis in the park's authorizing legislation.

Cultural and natural resource management issues at Kaloko-Honokōhau are in many cases interrelated, permitting strategies to be likewise linked. Also, recreation use, particularly along the shoreline, needs to be managed to avoid conflicting with resource management strategies.

Cultural and natural resource management issues have been identified at Kaloko-Honokōhau. Strategies have been developed to resolve each of these issues. The proposed action calls for the implementation of these strategies.

**Cultural Resources.** Four major cultural resource management issues have been identified at Kaloko-Honokōhau:

1. The Identification and Inventory of Archeological Resources. Before the archeological resources of the park can be properly managed, we must know what they are and where they are. Although existing knowledge of the cultural resources of the park is better than with most new parks, there is still a lot that is not known. Archeological surveys for the Kaloko parcel are almost complete; only minor gaps need to be filled in. For the Honokōhau parcels, however, archeological surveys that have been done can only be considered as preliminary. Field checking of recorded sites needs to be done to update condition assessments of the resources and to determine whether or not the existing data on them are accurate and complete.

Archeological resources are both prehistoric and historic. The historic resource study being prepared by the NPS Denver Service Center will have its data integrated with data from the archeological studies in order to have a more complete picture of what the resources that exist today represent. Prehistory and history overlap a great deal in this park and one cannot



understand and interpret the complete picture without having input from both archeology and history.

2. The Identification and Protection of Cultural Resources. It is well known that Kaloko-Honokōhau National Historical Park is important to native Hawaiians for a variety of reasons. One is the cultural and spiritual significance they attach to the area. Ethnographic research needs to be conducted to document and record how the Hawaiians traditionally used the area and what locations and features within the park are of particular importance to them. This includes not only the archeological and historical sites, but also locations and features that may have no distinguishing characteristics to someone who does not know of the area's cultural significance. Oral histories must be recorded to complement and supplement the documented history and the archeological record. Without this aspect of the park's cultural history, its cultural significance and the resources therein cannot be fully understood or appreciated.
3. The Preservation and Stabilization of Major Archeological Resources. Numerous major archeological resources are known to exist in the park. These include two fishponds, a fish trap, several *heiau*, a *holua*, numerous residential features and complexes, petroglyphs, and numerous other archeological features. Many of these are in a poor state of preservation because of years of neglect and the effects of waves, vegetation, human impacts, and other factors. These resources must be evaluated and selected ones stabilized and preserved as representative examples of the cultural resource base of the park. Major work is to include vegetation removal, stabilization of collapsed walls and platforms, and restoration of walls and platforms. As part of this program, it will be important to understand the nature of human impacts to these resources and to identify strategies that will both allow visitors to the park to enjoy the resources and at the same time protect them from adverse impacts.
4. The Restoration and Traditional Use of Selected Cultural Resources. In keeping with Kaloko-Honokōhau's purpose as "a center for the...perpetuation of traditional native Hawaiian activities and culture," some of its cultural resources must be considered for restoration and traditional use. The park's two fishponds are the most appropriate resource for this kind of treatment. As a necessary first step, archeological, historical, and oral history research needs to be done to determine the feasibility of and the costs associated with restoring one or both of the fishponds to a functioning aquaculture condition and maintaining it as such. The impacts of such an action on other park resources, such as endangered water bird habitat, must be carefully considered as part of this analysis.

Some of the other cultural resources suitable for this treatment would include the park's agricultural features which could be restored to enable traditional Hawaiian horticulture crops to be grown again. Also, one or more of the *heiau* could be restored to facilitate traditional ceremonial activities being performed on the stone platforms. These and any other actions must be carefully coordinated with interested and knowledgeable native Hawaiians.



Hawaiian *holua* were great stone sled courses upon which chiefly families skillfully rode. In ancient times the sloped course was covered with grasses.

The following describes the park's strategy for dealing with the four major cultural resource management issues just identified.

The Identification and Inventory of Archeological Resources.

Past work in the park has documented that significant archeological resources are numerous and located throughout the entire area. The strategy here is to compile and consolidate all existing information and then to supplement that information as needed by additional field work.

Complete the analysis of previous archeological studies in the Kaloko *ahupua'a* and use the resulting report to increase knowledge of the archeological resources of the park.

Prepare archeological base maps utilizing both existing information and new information generated by additional field work. This includes revisiting recorded sites and updating site maps to make sure they are complete and accurate.

Complete the historic resource study to document and record the historical use of the park.

The Identification and Protection of Cultural Resources Important to Native Hawaiians. As noted, it is well known that Kaloko-Honokōhau is an important area to native Hawaiians. What now needs to be documented is what particular resources and areas of the park are the most culturally significant and sensitive and deserve special attention and protection. Before active plans can be developed, basic data must be collected as follows:

Prepare an ethnographic overview and assessment to provide direction for future research.

Upgrade traditional use and cultural landscape data by working primarily with native Hawaiians who have ties with this land — that is, have historically lived on it and used it.

Upgrade existing oral history and ethnography by interviewing knowledgeable Hawaiians and other long-time residents of the area.

The Preservation and Stabilization of Major Archeological Resources. After significant resources have been located and identified, strategies need to be developed to preserve, stabilize and interpret them. The following projects have been identified to accomplish this:

Conduct a limited study to detail where the original Kaloko fishpond wall foundations were located.

Conduct a study to determine if a rock wall exists beneath the sand berm fronting the 'Aimakapā fishpond.

Stabilize and restore Maka'ōpio *heiau* after agreements have been reached with the State of Hawai'i for its management.

Curate the museum collection that resulted from archeological studies conducted in 1970 and 1971 (NPS recently acquired this collection). A member of the park staff must receive sufficient training to assist with this project and to make certain the collection is properly cared for.

Determine the course of action for the Kaloko fishpond wall. This is the third phase of a multi-phase program to determine whether or not it is feasible to restore the seawall to its original condition.

Remove alien Christmasberry from the park to protect archeological sites. This is a project integrated with natural

resource management as part of controlling alien species in the park.

Remove alien *koa haole* from the park to protect archeological sites. This is also an integrated project.

The Restoration and Traditional Use of Selected Cultural Resources. In order to determine whether certain of the park's cultural resources can be restored for traditional uses, additional information is needed. Information is also needed to determine the cost associated with the needed restoration work and the cost of maintaining these cultural resources. The following strategies have been identified for the restoration of cultural resources for traditional uses.

Upgrade traditional use and cultural landscape data by working primarily with native Hawaiians who have ties with this land — that is, have historically lived on it and used it.

Upgrade existing oral history and ethnography by interviewing knowledgeable Hawaiians and other long-time residents of the area.

Conduct specific research which would include working with knowledgeable individuals to determine how to go about re-establishing traditional Hawaiian aquaculture.

Determine appropriate actions necessary to re-establish traditional Hawaiian horticulture in the park's agricultural features.

Work with knowledgeable Hawaiian individuals and organizations to determine, both physically and spiritually, which additional structures and features in the park are amenable to restoration. Determine the cost of restoring and maintaining any such features.

#### NPS Cultural Resource Terms

The general management plan uses certain terms in discussing the protection and management of Kaloko-Honokōhau's cultural resources. The National Park Service, in developing its management policies and guidelines for cultural resource management, has given these terms specific and precise meanings.

**preserve**      The act or process of applying measures to sustain the existing form, integrity and material of a structure and the existing form and vegetative cover of a site.

- stabilize** The act or process of re-establishing the structural stability of a structure through the reinforcement of load-bearing members or by arresting deterioration leading to structural failure.
- restore** The act or process of accurately recovering the form and details of a structure and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of missing earlier work.
- reconstruct** The act or process of reproducing by new construction the exact form and detail of a vanished structure, or any part thereof, as it appeared at a specific period of time.

All preservation stabilization, restoration, and reconstruction of cultural resources at Kaloko-Honokōhau will be done in full conformity with Section 106 of the Historic Preservation Act of 1966, Executive Order 11593, procedures of the Advisory Council on Historic Preservation, and National Park Service Policy for Historical Areas.

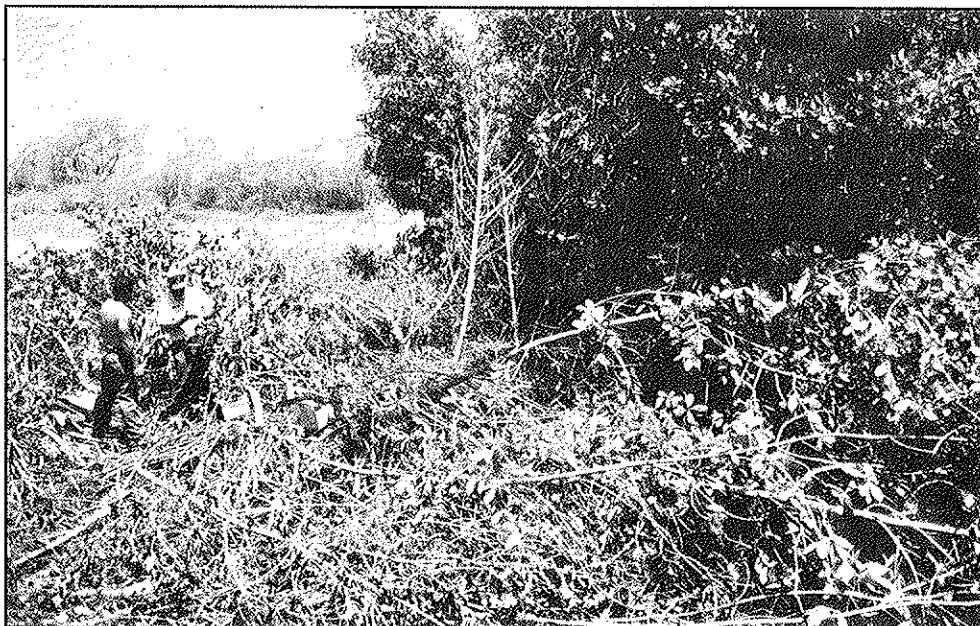
**Natural Resources.** Kaloko-Honokōhau's significance as a unit of the national park system is derived primarily from the numerous and important Hawaiian cultural values found there. The park, however, also contains natural resource values of considerable importance requiring management and protection. These include endangered native water bird habitat and anchialine ponds. Present knowledge of these and other natural resources is limited and the major focus of their management and protection must first be the development of an adequate baseline data base.

Natural resource management in the park to date has consisted primarily of the phased removal of alien red mangrove from around Kaloko fishpond, as called for in the Spirit of Ka-loko Hono-kō-hau, as well as destroying unestablished seedlings and seed pods along the coast. Within the last decade mangrove destroyed the waterfowl habitat of Kaloko fishpond for several species, including two species of native water bird listed as endangered by the U. S. Fish and Wildlife Service. Much of the removal was carried out from a small boat on the pond to preclude damaging archeological sites found at the pond's edge.

A major objective at Kaloko-Honokōhau is to protect the endangered water bird species that inhabit the park, including protection from disease and predation by free-ranging domestic and feral animals. National Park Service research scientists are presently involved in a three-year water bird study at Kaloko-Honokōhau, including a one-year monitoring effort. The

monitoring is scheduled for completion in the summer of 1994 and results, updated information on plants, invertebrates, and bats, will be available then. The final report is scheduled for completion in January 1995.

A major natural resource management concern at Kaloko-Honokōhau is the difficulty of maintaining natural systems in an area that is rapidly urbanizing. Septic systems, industrial area storm drains, and cesspools on lands immediately upslope are already affecting the park's fishponds, anchialine pools, and offshore waters. The park has an urgent and immediate need to begin a comprehensive and scientifically credible monitoring system of ground and ocean waters to detect changes and pinpoint sources. In keeping with the recommendation contained in the Spirit of Ka-loko-Hono-kō-hau to establish a water quality monitoring system, the park will hire a permanent scientist (marine biologist) to develop and direct a professional program. Stationed at Kaloko-Honokōhau, this scientist will be part of the Cooperative Park Studies Unit at the University of Hawai'i and will lead in water quality monitoring for all three national park areas on the west coast of the island of Hawai'i.



The eradication of red mangrove, an alien plant, from around Kaloko fishpond has been a high priority resource management project at Kaloko-Honokōhau for several years and is now completed. Its removal will allow the Park Service to undertake efforts to restore the pond's potential as habitat for endangered native water birds and as a producing fishpond.

Five major natural resource management issues are present at Kaloko-Honokōhau:

1. The Protection of Anchialine Pond Resources. Before developments drained most of them, numerous small brackish

ponds intimately interconnected to the subterranean water table were typical along Hawai'i's leeward coasts. Over time, many of these ponds developed separate, though closely related, invertebrate fauna. The remaining ponds have become relic ecosystems with already rare and diverse biota. Those found along the Kaloko-Honokōhau coast are numerous, but have been only lightly inventoried. It is very important to completely inventory the ponds — their biota and condition.



In the past, some of Kaloko-Honokōhau's anchialine ponds have been subjected to intensive and uncontrolled use resulting in the degradation of their fragile and unique biota.

Both the introduction of alien fishes and groundwater nutrient chemistry play roles in controlling the benthic community structure in these ponds. Several of the anchialine ponds in the park show signs of severe pollution (smell, scum, heavy algae growth). Possibly, developments *mauka* are discharging sewage and storm drains directly into lava tubes leading into the park's groundwater system. The extent, type and point sources of pollution need to be determined.

The natural rate of pond eutrophication is apparently being accelerated by man-caused pollution, well drilling on *mauka* lands, erosion, and siltation and by the growth of alien vegetation. Management of these important resources must be based on good data and research, both of which are lacking.

2. Endangered Water Bird Habitat Restoration and Monitoring. Hawaiian stilts and coots are known to nest on 'Aimakapā

fishpond, but their success rate is poor. Kaloko is now free of mangrove. Once free of picklewood and recolonized with native wetland species, Kaloko should once again become nesting habitat. Nesting success is probably limited by predators (mongoose, feral cats and rats). This needs to be studied and management recommendations formulated.

The island of Hawai'i has very few wetlands suitable for native birds. Thus, key areas such as 'Aimakapā and Kaloko fishponds become especially important areas for wetlands enhancement and protecting threatened and endangered water bird species.

3. The Protection of Sensitive Species Other than Water Birds. In addition to the endangered water birds, the park is used, to an unknown degree, by other threatened and endangered species of wildlife. These include the Hawaiian hoary bat, Newell's shearwater, the Hawaiian dark-rumped petrel, and the hawksbill and green sea turtles. Several candidate endangered species, including an anchialine shrimp, are also thought to occur in the park. An assessment of the status of these sensitive species is needed to enable the park to effectively manage them.
4. Vegetation Restoration and Management. As called for in the Spirit of Ka-loko Hono-kō-hau, a primary purpose of the park is to preserve and interpret pre-contact Hawaiian culture and land use. A graphic landscape plan is needed before proceeding with efforts aimed at restoring the character of the vegetation to that which existed before non-Hawaiian introductions. Emphasis will be on replacing the more common aliens with culturally important or endemic species.

Alien grasses, primarily fountaingrass with some natal redtop, are the dominant vegetation types covering much of the park. With the normally dry, windy conditions, the presence of these grasses produces a high fire danger. Also, wildfires lead to more area being covered by these grasses. While eradication is probably impossible, a study is needed to find a reasonable means of control.

Most native species are threatened by the presence of fountaingrass and other alien plants; and archeological features are endangered by three alien plants in particular: *kiawe*, *Christmasberry*, and *koa haole*.

5. Understanding and Managing Human Impacts on Marine Resources. Human activities are impacting shoreline, tidepool, and offshore resources to an unknown degree. Park visitor activities include collecting "ornamental" invertebrates such as coral and cowries, invertebrates and algae for food,



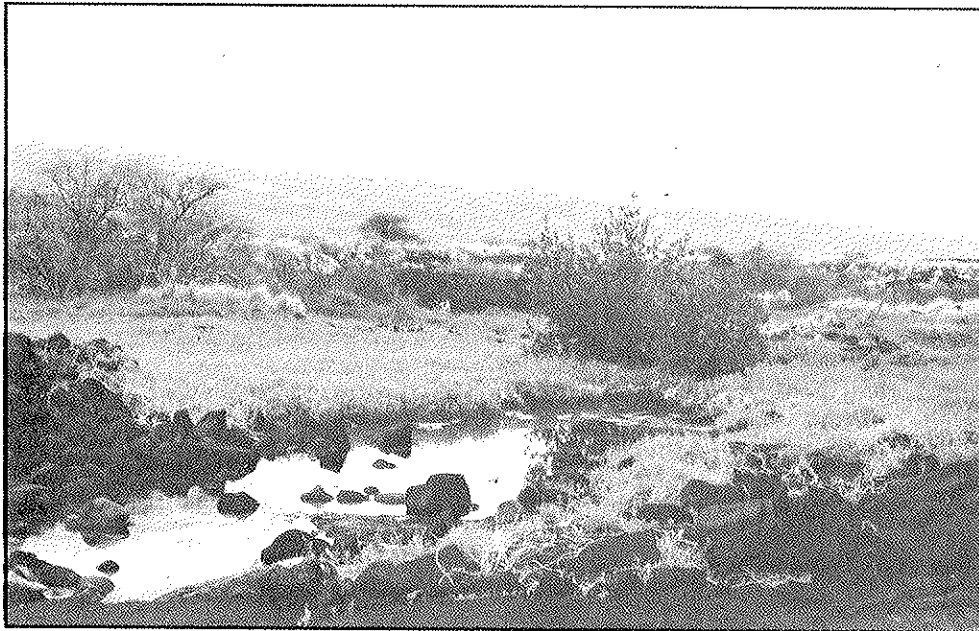
shore pole fishing, throw net fishing, recreational swimming and sunbathing.

There is also concern about damage to the park's benthic and shoreline communities by anchoring tourist boats, abuse of the ecosystem by scuba divers taking souvenirs, and commercial tropical fish collecting activities. Consumptive uses (fishing and collecting in park waters) need to be better understood and managed.

The impact of Honokōhau Harbor on park resources is also poorly understood. Siltation from bottom dredging and harbor construction and contaminants, heavy metals, and sewage are all a concern.

The park's strategy for dealing with the five natural resource management issues just described follows.

Protection of Anchialine Pond Resources. The anchialine ponds are inland bodies of water separated from the ocean with measurable salinity and tidal fluctuations. They support a unique biota which is not well understood. Several of the ponds show signs of severe pollution. The strategy for effectively managing and protecting these resources is to:



The park contains many freshwater to brackish pools and ponds like this one. Called anchialine ponds, they are rare in Hawaii and contain extraordinary invertebrate and lower plant ecosystems.

Inventory and map the ponds.

Control damaging human use.

Study the geohydrology and the potential for contamination of the shallow freshwater aquifer at Kaloko-Honokōhau.

Remove all alien vegetation from in and around the ponds.

Develop protocols for monitoring the physical, chemical, and biological parameters of the ponds and train park staff in how to conduct the monitoring.

Begin a program to stabilize the most pristine ponds first and progressively rehabilitate the less pristine.

Monitor the ponds using protocols to be developed by qualified experts.

Endangered Water Bird Habitat Restoration and Monitoring.

Water birds which currently or historically have utilized the park are an important resource needing special attention. Important components of endangered water bird management in the park include predator control and determining their tolerance for human disturbance. In managing water bird habitat in the park, the Park Service, under the Endangered Species Act, will continue the informal consultation established with the U. S. Fish and Wildlife Service (see Appendix D). Listed below are the key steps needed to better understand park water birds and their habitat, to restore the habitat, and to monitor changes over time and take further corrective action if necessary:

Removal and control of the mangrove and pickleweed are the critical first steps. Control efforts for these two plants and others will need to be continual.

Some habitat restoration will be needed if Kaloko fishpond is to meet its potential as breeding habitat for endangered coots and stilts.

Control of predators (mongooses, cats, dogs, and rats) from around the endangered waterbird areas.

Development of a record of use of the park by birds by designing an observation log and database management program and training park staff in bird identification.

‘Aimakapā fishpond should be surveyed for bird nests and bird predation. Coot, stilt, and other water bird nesting histories in the park should also be researched, with an emphasis on ‘Aimakapā and Kaloko fishponds, anchialine pools, and shoreline areas.

The ecology of park water birds should be developed.

Long-term water and migratory bird monitoring needs to be initiated to track the status of these species and enable the park to effectively manage this resource.

Protection of Sensitive Species Other than Water Birds. As noted, threatened and endangered species of wildlife other than water birds are also found in the vicinity of the park, including the Hawaiian hoary bat, Newell's shearwater, the Hawaiian dark-rumped petrel, and the hawksbill and green sea turtles. Several candidate endangered species, including an anchialine shrimp, are also known to occur in the park. The following strategy will be used to obtain a better understanding of these resources so they can be effectively protected and managed:

Each known sensitive species will be studied, management recommendations will be prepared, term monitoring protocols will be designed, and park staff will be trained in how to properly conduct this monitoring.

Separate monitoring programs are being established on the green and hawksbill sea turtles, with the advice of the National Marine Fisheries Service (National Oceanic and Atmospheric Administration).

Each known sensitive species will be monitored using protocols to be established by specialists, in consultation with the U. S. Fish and Wildlife Service and the National Marine Fisheries Service.

Vegetation Restoration and Management. Most of the park is dominated by alien plants. Only the low strand and strand scrub are typically native-dominated. The long-term strategy for addressing this problem is to:

Prepare a detailed park map showing the existing vegetation by type.

Determine the park's vegetative history by studying pollen cores.

Conduct fountaingrass research to develop eradication plans for this alien species, which constitutes a significant fire hazard and potentially threatens the conservation of endemic plant species.

As an interim measure, until a comprehensive vegetation management plan can be prepared, remove mangrove and *kiawe* and replace them with native species.

As an interim measure, until fountaingrass research is completed and alien scrub and fountaingrass hazards are

addressed park-wide, remove alien species from around sensitive native species that are threatened by fire.

As an interim measure, until a comprehensive vegetation plan can be prepared, remove alien Christmasberry and *koa haole*.

Prepare a vegetation management plan identifying alien species to be removed, preferred methods for eradication, and a landscape restoration plan documenting where native species are to be planted.

Implement the vegetation management plan by removing alien species and planting natives.

Prepare a fire management plan to reduce threats to visitors, neighboring lands, cultural resources, and sensitive native plants and animals. This plan makes it clear that if fire suppression is needed in the park, these activities must defer to the protection of cultural resources (except when public safety is threatened).

Understanding and Managing Human Impacts on Marine Resources. Human activities are impacting shoreline, tidepool, and offshore resources to an unknown degree. The strategy for better understanding the extent of the problem and for developing plans of action to reverse significant impacts is to:

Gather baseline data and develop protocols for monitoring shoreline and tidepool resources and park user activities along the shoreline and train park staff in the use of these protocols.

Study the use of offshore waters and the benthic impacts from such activities as tourists anchoring their boats, scuba divers taking souvenirs, commercial operators collecting tropical fish, etc. The monitoring protocols will have to be developed and park staff trained in their implementation.

Assess consumptive use, develop management options and monitoring protocols, and train park staff in their implementation.

Assess Honokōhau Harbor impacts on the park from debris that floats into the park area and from siltation from bottom dredging and harbor construction; collect core samples from the harbor area to assess sediment contaminants; and develop protocols to monitor changes in sediment composition and deposition.

Provide additional emphasis on ongoing programs to clean up debris that floats into the park area (especially fish nets and

plastic that could entangle turtles or sea birds) and to track proposals for harbor construction or dredging activities to protect park resources from damage.

Monitor shoreline, tidepool, and offshore resources for consumptive uses and harbor impacts.

**Visitor Use and Interpretation.** The Spirit of Ka-loko Hono-kō-hau states that while the initial beneficiaries of the park may be the Hawaiians, people from other parts of the nation and the world will also be recipients of its benefits; and that the park will be a special place not only for Hawaiians, but for local residents and out-of-state visitors alike.

Certain park resources such as sacred Hawaiian burial sites and endangered native water bird habitat will require special management in that visitor requirements here will need to be made subordinate to the protection of the resources and the traditional activities occurring in these key areas. This would be particularly true around the fishponds during periods of stilt and coot nesting. Visitor use of the large anchialine pond surrounded by *ahu* will also need to be structured to protect the natural values of this important park resource.

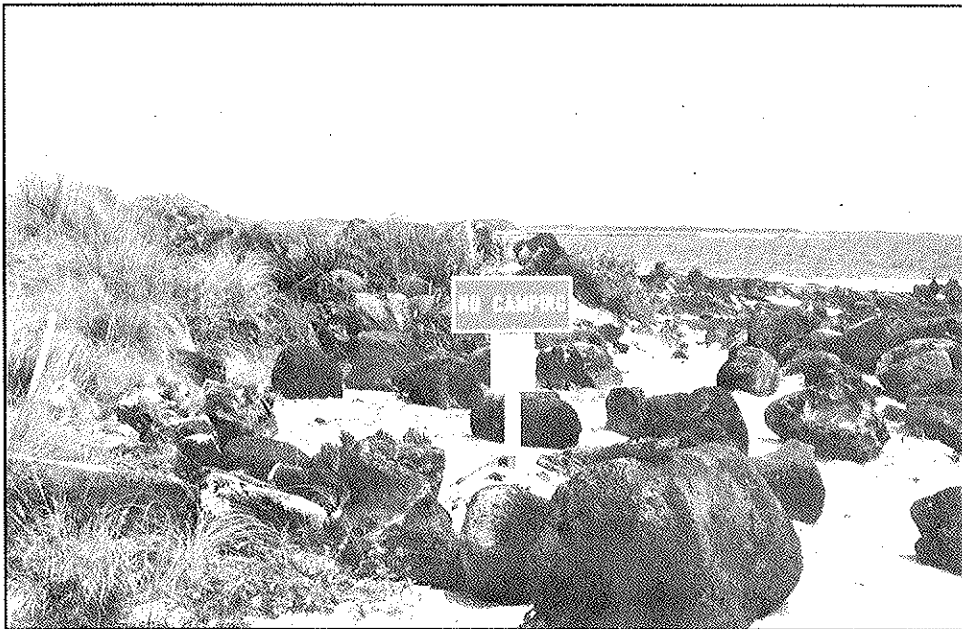
Recreational use of the park by visitors is to be structured to some degree and, as called for in the Spirit of Ka-loko Hono-kō-hau, is to take place primarily along portions of the shoreline and in the offshore waters. Providing the visitor with recreational opportunities for picnicking, fishing, snorkeling, diving, sunbathing, and hiking, however, is to be secondary to the Hawaiian cultural aspects of the park.

The visitor orientation center is to be developed as the primary contact point to inform visitors about the special nature of Kaloko-Honokōhau's resource values. Interpretation in the form of traditional Hawaiian cultural activities is to take place at a separate site proposed nearby, to be developed as a replica of a traditional Hawaiian village. Here, an informal atmosphere is to be maintained.

Kaloko-Honokōhau is a national historical park where the traditional native Hawaiian culture is to be interpreted for resident and off-island visitors. Interpretation is to focus on both the tangible aspects of that cultural (what can be seen) and the intangible (what has to be felt). Thus, the basic goal of interpretation at Kaloko-Honokōhau National Historical Park is to communicate the various aspects of the traditional Hawaiian way of life. To provide a glimpse of how the original residents of the park might have spent their time — their customs and practices, their spiritual beliefs. Interpretation will also focus on the important natural values of the park — its endangered water birds, anchialine ponds, and marine resources.

In keeping with the recommendations of the Spirit of Ka-loko Honokōhau, the primary interpretive theme at Kaloko-Honokōhau is to be the Hawaiian culture. The intent is to give visitors a basic understanding and a glimpse of the traditional Hawaiian lifestyle through orientation sessions, demonstrations, and walks to historical and archeological sites and natural features within the park. The proposed park-wide network of trails is to provide the means of access to these sites. The interpretive program is to include topics such as the Hawaiian language, the land/sea ethic, fishpond culture, extended family system, ancient dances and chants, crafts and religion. Cultural demonstrations are to be provided to give visitors an opportunity to participate as well as to observe. Living history demonstration and other activities, such as the opportunity to sample Hawaiian foods grown in the park, are to take place at a replica Hawaiian village proposed in the park.

Kaloko-Honokōhau's 'Aimakapā and Kaloko fishponds and the 'Ai'ōpio fish trap are the only ones of their kind in the national park system. Their presence in the park provides the National Park Service and in-depth cultural participants with a special opportunity to interpret for visitors those resources which are so important and unique to the traditional Hawaiian culture.



Kaloko-Honokōhau, because of its fragile resources and relatively small size, is to be developed for day use only. No public campgrounds are to be built in the park.

Both this plan and the Spirit report call for Kaloko-Honokōhau to be developed as a day-use park. No public overnight camping is to be allowed. Visitors will not be encouraged to leave established trails and hike cross-country nor will they be encouraged to visit the live-in cultural education complex to be developed in the park. No visitor

interpretation is to take place there, unless the participants themselves so desire.

The orientation center is to be the major trailhead for park visitors — trails are to branch out from here leading to the park's major cultural and natural attributes. The development of a trail system for visitors is to be based on the existing unimproved dirt roads, trails, and tracks in the park and will consist of the closing off of some existing unimproved roads and trails, improving others to National Park Service standards and, in some cases, constructing new trails. Some of the existing trails are historically significant, others more recent; some are linked to the park's attributes, others are not. The purpose of a trail system throughout the park is to provide safe and relatively easy access for visitors without adversely affecting park resources.

From the viewing deck near the visitor orientation center, an interpretive trail is to be built as a boardwalk over the 'a'a lava flow. The boardwalk is to form a loop, taking visitors back to the orientation center. The boardwalk is also to connect with other trails leading to 'Aimakapā fishpond and to coastal areas.

Provisions are to be made for trail access by disabled and elderly visitors to park areas beyond the orientation center through the use of certain types of mechanized vehicles, such as electric carts and/or narrow wheel base/rubber tired all-terrain vehicles (ATV's).

Although walking distances in the park are not great, the warm, usually sunny, Kona weather and the scarcity of vegetation here mean that visitors will need to be provided with shade at intervals along the trails. This is to be provided in the form of tree plantings or by the construction of small Hawaiian type shelters. Directional signing and wayside exhibits are to be provided along these trails as well.

The great majority of visitors will be entering the park via the proposed entrance road off the highway by motor vehicle (car, van, or bus). They will leave their vehicles in the parking lot and walk the short distance to the orientation center. Here visitors will receive their basic introduction to the park. This will include viewing museum exhibits, purchasing cooperating association publications, and viewing and listening to interpretive programs. Before proceeding out into the park, visitors will have a basic understanding of the resource values of Kaloko-Honokōhau, as well as needed information such as the advisability of carrying drinking water if they plan to walk beyond the proposed boardwalk trail. Visitors will also be able to receive information about other parks on the island of Hawai'i at the orientation center.

Those visitors coming into the park via Honokōhau Harbor through the fence gate proposed along the southern boundary will be on foot. Visitors coming into the park this way will need to continue to respect the privacy of the permittees who live nearby. Permittees who reside

in the dwellings next to 'Ai'ōpio fish trap, on the other hand, need to understand that they are within a national park area where public use is encouraged. Some of the visitors arriving via the harbor road will choose to drive to the small parking area proposed on the parcel of park lands south of the harbor entrance in order to view the cultural features and enjoy the small sand beach found there.

If resort-residential development takes place on the Kohanaiki lands to the north, it is assumed that many of the future residents and visitors there will choose to visit the national park next door. These visitors would be guided so as to enter the park via the existing coastal trail. Visitors entering the park from this direction would be relatively few in number and on foot. No vehicle access is to be allowed.

Through the development of a park-wide trail system, visitor use patterns are to be structured so as not to unduly interfere with (1) the presence in certain areas of the park of Hawaiians and others engaging in traditional subsistence fishing, tending fishponds, subsistence farming, or otherwise engaging in the daily tasks of a Hawaiian culture-oriented existence; (2) the activities of endangered Hawaiian water birds and threatened sea turtles; and (3) the sacred grounds of Hawaiian burial sites.

A park-wide sign plan will be needed to provide visitors with clear and concise directional information. Signs will need to be standardized in a format that is consistent with the park's purpose, and designed and carefully sited so as to not overwhelm the visitor. Based on the park-wide sign plan, a wayside exhibit plan will need to be prepared to identify the messages and materials for the proposed waysides.

There is to be no concession operation in the park. The park's location next to a large and growing urbanized area precludes the need to provide the visitor amenities usually offered by a park concessioner.

It is anticipated that public recreation use of the sand beach at Honokōhau will increase in the future with the development of the park. At the present time use of this secluded sand beach by visitors as a clothing optional area is occurring. With anticipated general increase in public use of this beach, such special uses will most likely be prohibited in the future.

As the park develops, visitation to Kaloko-Honokōhau is expected to grow at a rapid rate. The park is located near an expanding urbanized area and is still relatively unknown to many Hawai'i residents and most off-island visitors. Once it becomes operational and developed it could in a very short time be overwhelmed with visitors. As noted, in 1991, total visitation to the park was recorded at nearly 47,000.



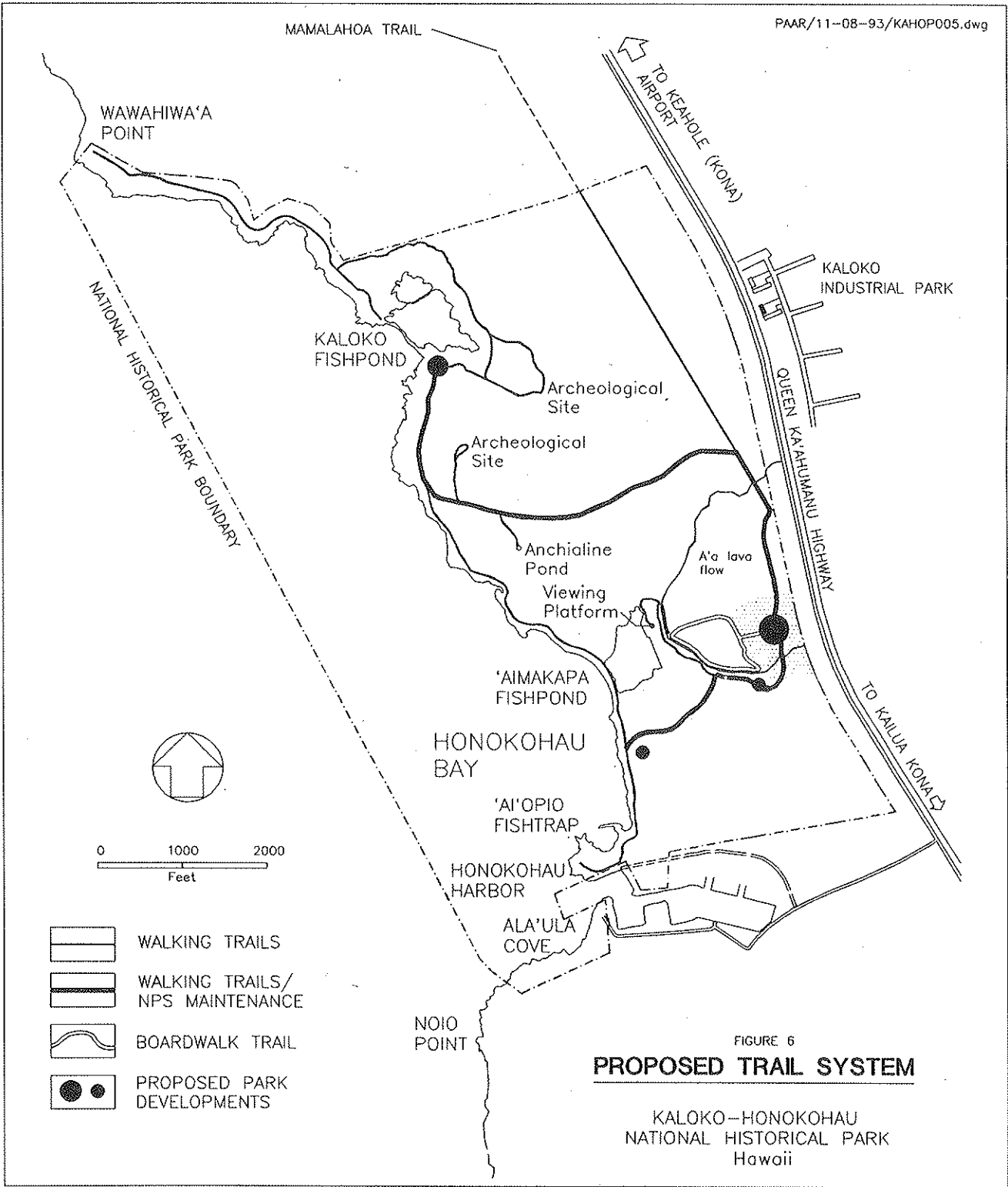


FIGURE 6  
**PROPOSED TRAIL SYSTEM**

KALOKO-HONOKOHAU  
NATIONAL HISTORICAL PARK  
Hawaii



Wherever possible, existing foot paths are to be utilized in the development of a park-wide trail system. It will be designed to give visitors access to Kaloko-Honokōhau's cultural and natural attributes.

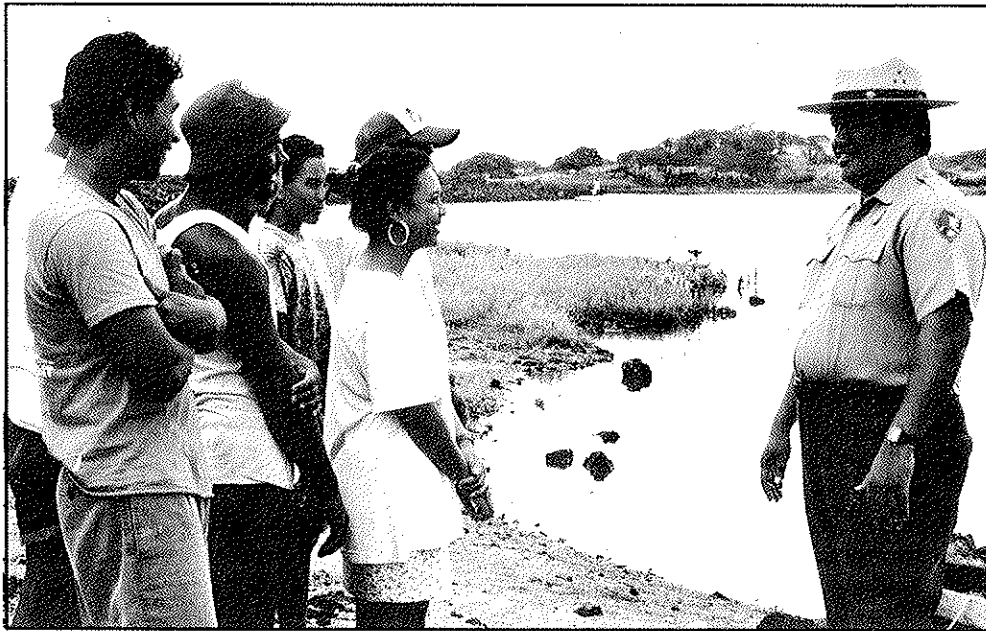
Visitation at Kaloko-Honokōhau, like other national park units in Hawai'i, is expected to run at a fairly constant level throughout the year, with some increase anticipated during the summer months. Most of these will be off-island visitors from the U.S. mainland, Japan, Canada or Europe. There will also be many island residents who will be park visitors. It is primarily from this latter group that those Hawaiians and others who desire to participate in the live-in educational and cultural programs and activities in the park will come.

In the future, the type of visitor to Kaloko-Honokōhau is likely to change from the now typical recreational user of the sandy beach and occasional bird watcher to the visitor who is coming for the opportunity to briefly experience traditional Hawaiian culture.

The total daily capacity for the park was set at 1500 in 1974 as a preliminary estimate in the Spirit of Ka-loko Hono-kō-hau and is to be used here as a point of departure in planning for the design and construction of visitor use facilities. The total daily capacity of 1500 assumes a range of 250 to 350 visitors as the capacity of the park at any one time.

Constant monitoring will be needed to ensure that set visitor capacities are appropriate — that park resources are not being degraded, that impacts on Hawaiian cultural participants are minimal, and that the quality of the visitor experience is not being lowered. As noted, major visitor use patterns are to be centered around the orientation center. Visitor activities are to be structured so as to be apart from the live-in cultural education complex and the nearby area so as to

allow participants there to be able to learn in an atmosphere of quiet and not subject to constant interruption and distraction.



National Park Service interpreters tell about Kaloko-Honokōhau's past as a thriving Hawaiian settlement.

**Completion of Land Acquisition.** The management plan for the Kaloko-Honokōhau cultural park area proposed in the 1974 Spirit of Ka-loko Hono-kō-hau calls for the acquisition and direct management by the National Park Service to control uses of these park lands. Now, sufficient lands have been acquired by the National Park Service to begin planning for the development of the park, but not to adequately protect all of the resources associated with the national significance of the Honokōhau Settlement National Historic Landmark. It is clear that the legislative intent was to not only protect the individual sites and features found within, but to protect the intangible resources needed to fully embody the national historic landmark's overall cultural significance.

The inclusion of the seashore lands in the park at both ends of Honokōhau Bay plus the offshore waters helps to create a self-contained physical entity that can be more easily protected from adverse uses on adjacent land and water areas. If major development took place along the northern shoreline of Honokōhau Bay, the park's marine resources could not be adequately protected. Environmental compliance documentation accompanying the Spirit of Ka-loko Hono-kō-hau study report points out that by including these seashore lands in the park, an easily identifiable boundary is formed that will be apparent to management, to visitors, and to commercial fishermen approaching the park from the sea.

Consistent with the intent of the park's authorizing legislation, Public Law 95-625, Kaloko-Honokōhau National Historical Park's Land Protection Plan calls for all privately-owned lands within the park to be acquired in fee. The plan was approved in 1984. As previously noted, three of the four tracts of privately-owned land in the park have been acquired in fee.

The last remaining parcel of privately-owned land in the park is an 18-acre strip of coastal land extending up to Wāwāhiwa'a Point. This parcel is part of a proposed large-scale development project. The National Park Service will seek to acquire a sufficient interest in this parcel of land to adequately protect the resources values found there and on the adjacent park lands and waters.

#### **Management of State Lands and Waters Within the Park.**

The park's authorizing legislation provides the following direction with respect to lands and waters within authorized boundaries under the jurisdiction of the State of Hawai'i: (1) lands may be acquired only by donation and (2) the National Park Service may enter into cooperative agreements for the management of submerged lands following the marine management policies of the State.

The State of Hawai'i does not wish to donate any of its lands in the park to the National Park Service. Based on the above and the desire by NPS to manage and protect the significant cultural resources found on the two small parcels of State-owned lands north and south of the entrance to Honokōhau Harbor and the historically significant Māmalahoa Trail, it has been requested that the State of Hawai'i (Department of Land and Natural Resources) permit NPS management on these lands through lease. The former Chairperson of the Board of Land and Natural Resources, who also acts as the State Historic Preservation Officer, supported the NPS request to manage these lands.

With regard to the offshore waters, the National Park Service will continue its efforts to get the State Department of Land and Natural Resources (DLNR) to designate the portion of the Honokōhau Bay within the park's authorized boundary as either a marine life conservation district or a marine fisheries management area, and following such designation to establish a management program for the area. Included in the management program would be the identification of the prohibited and permitted activities within the national park. Designation by the State would augment the National Park Service's capabilities to regulate recreational and boating activities within park waters, as well as permit subsistence fishing and shoreline food gathering there.

**Adjacent Land Uses.** The Spirit of Ka-loko Hono-kō-hau and the park's authorizing legislation both recognize that the resources of Kaloko-Honokōhau would be affected by what happens on lands adjacent to the park, calling for use of the traditional native Hawaiian

*ahupua'a* concept of land and water management. Implicit in this concept is the relationship between the land and the sea. The goal here is to seek the establishment of adequate controls on air and water quality and the protection of the scenic and aesthetic values of the surrounding land and water areas.

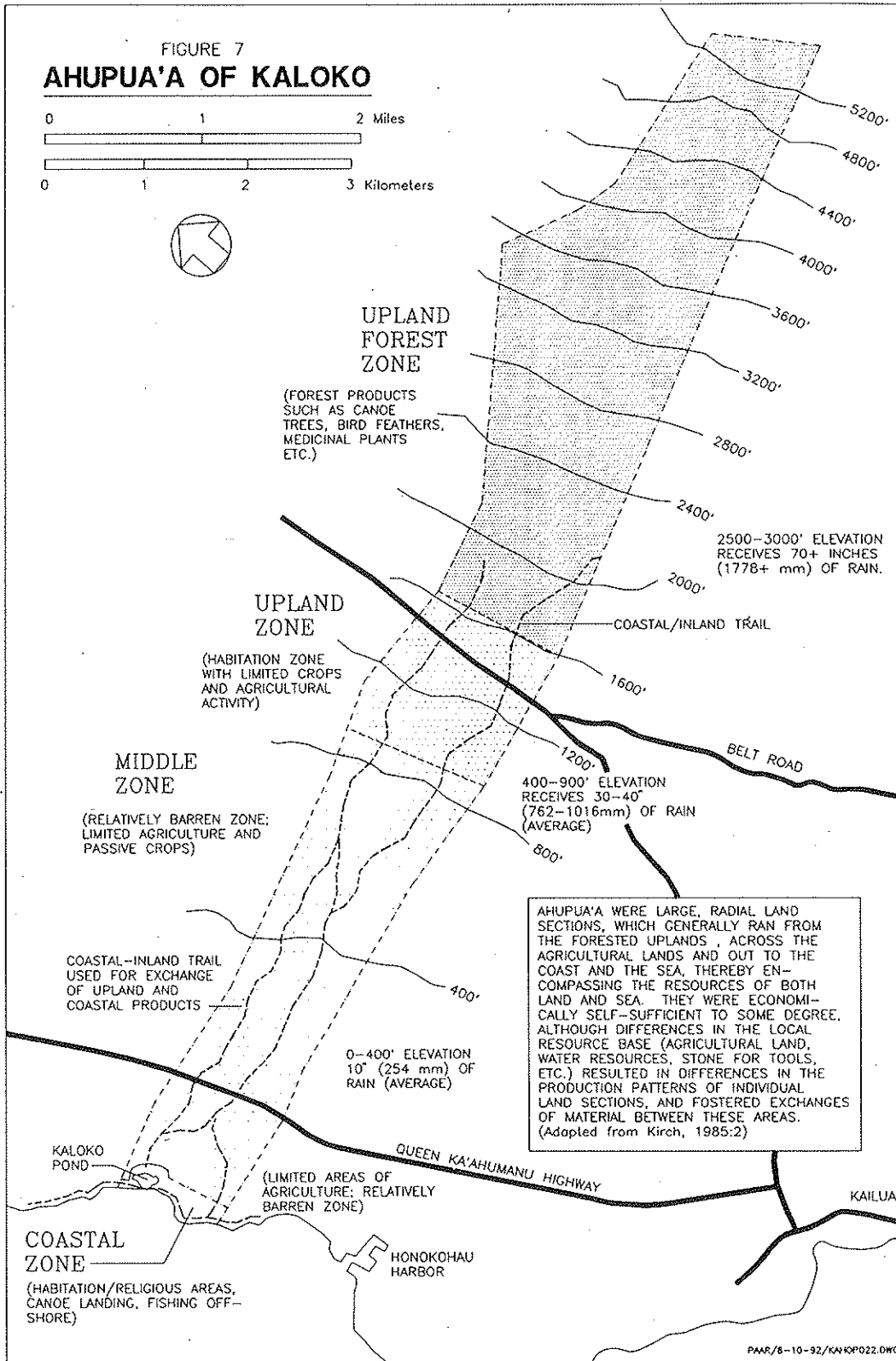
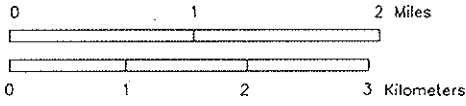


Within authorized boundaries, this fine, coral sand beach at Ala'ula cove is on State of Hawai'i lands over which the Park Service would like to obtain management authority to protect the resources found there.

Within the park, air quality is to be monitored to identify any changes that might prove hazardous to park resources or to the health of visitors. Noise levels are to be monitored to establish baseline data for assessing the impact of vehicular traffic on the adjacent Queen Ka'ahumanu Highway and the impact of air traffic from nearby Keāhole Airport on the quality of the visitor experience. All facilities in the park operated by the National Park Service will be in compliance with standards set by the Clean Air Act and the Noise Control Act.

In the Spirit of Ka-loko Hono-kō-hau, the importance of cooperative planning efforts with state, county, and private landowners was emphasized. Essentially, this meant the re-establishment of many of the management practices used by early Hawaiians; i.e., a hierarchy of use density from concentrated living areas along the shoreline and around the shoreline to agricultural uses at the middle elevations and use of the *mauka* lands for watershed, hunting, and the gathering of timber resources.

FIGURE 7  
**AHUPUA'A OF KALOKO**



PAAR/8-10-92/KA/KOP022.DWG

The utilization of the traditional Hawaiian *ahupua'a* concept to care for national park resources may be unique to Kaloko-Honokōhau, but today in many parks throughout the system management and resource protection issues are not confined to park boundaries. This is particularly true of national parks in an urban setting. Although not there yet, in the coming decades Kaloko-Honokōhau will have become an island of open space in the midst of an expanding urbanized area. But Kaloko-Honokōhau is not an island — it must be regarded as a part of the surrounding community. Park management needs to foster that relationship.



The *ahupua'a* of Kohanaiki, Kaloko, Honokōhau, and Kealakehe extend up the western slopes of Hualālai volcano. Maintaining the integrity of Kaloko-Honokōhau's resources will depend a great deal on what happens in the future on those *mauka* lands.

All of the lands of the *ahupua'a* of Kaloko and Honokōhau falling within park boundaries have now been acquired. Cultural and natural resources found within these park lands — fishponds, *heiau*, sacred Hawaiian burial sites, anchialine ponds, endangered water bird habitat — are now assured of permanent protection. These lands, however, constitute only the lower portions of both *ahupua'a*. Each extend *mauka* up the slopes of Hualālai volcano for several miles. Most of these lands are and will likely remain in private ownership. They are still largely in open space, but their location, particularly those lands closest to the highway, makes them prime candidates for urbanization. In the coming decades, development will occur on these lands; its nature and extent subject to the desires of the landowner and the regulatory constraints the State of Hawai'i and Hawai'i County wish to impose.

To carry out the legislative intent and in keeping with the guidance contained in the Spirit of Ka-loko Hono-kō-hau, the National Park Service, primarily in the person of the park superintendent, will work cooperatively and continually with appropriate state and county officials and with neighboring public and private landowners to anticipate, avoid, and attempt to resolve potential conflicts. The National Park Service is to play a proactive role in this regard, working with others to avoid or minimize possible adverse impacts on the park before they occur. Federal laws, such as the Clean Air Act, as amended, and the Clean Water Act have applicability here. The goal is to protect park resources through the identification of mutual interests in maintaining the quality of life for all members of the surrounding community. Implicit here will be the goal to integrate Kaloko-Honokōhau National Historical Park into the regional environment. This is to be done by the park superintendent on an ongoing and continuous basis, including during the development of this general management plan.

If judged to be necessary and appropriate, the park superintendent may pursue formal agreements with other government agencies and/or landowners (private as well as public). Early coordination is important on specific projects and proposals to ensure that differing points of view are considered and that potential conflicts are identified and avoided or resolved, if possible. The superintendent is to encourage compatible (with the national historical park) uses on adjacent lands. Also, the superintendent will attempt to mitigate potential adverse effects on park resources by actively participating in the planning and regulatory processes of Hawai'i County, the State of Hawai'i and other federal agencies.

In order to maximize the park's effectiveness in dealing with the adjacent land use, baseline water quality data need to be collected from the fishponds, anchialine pools, and offshore ocean waters. Also, there needs to be continuous monitoring for water quality trends, future impacts, and to locate and mitigate any actions outside of the park that are known to be affecting water quality in the park. These needed research and monitoring activities are to be carried out by the park's marine biologist.

**Establishing the Kaloko-Honokōhau Na Hoa Pili O Kaloko-Honokōhau (The Friends of Kaloko-Honokōhau).** Section 505(f)(7) of Public Law 95-625 provided that the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission would terminate within ten years of the enactment of the enactment of Public Law 95-625. Public Law 95-625 was enacted in November 1978. Since more than ten years have passed since the date of enactment of this statute, the National Park Service cannot use Public Law 95-625 as the basis for establishing the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission.



Since February 1993, the Department of the Interior and the National Park Service have not been able to sponsor the establishment of an advisory commission for Kaloko-Honokōhau National Historical Park. Executive Order 12838, issued February 10, 1993 and entitled *Termination and Limitation of Federal Advisory Committees*, places restrictions and limitations on all federal executive departments and agencies with regard to sponsoring the continuation or establishment of federal advisory committees. As part of the federal executive branch, the National Park Service must comply with the provisions of this executive order (see Appendix A for the full text).

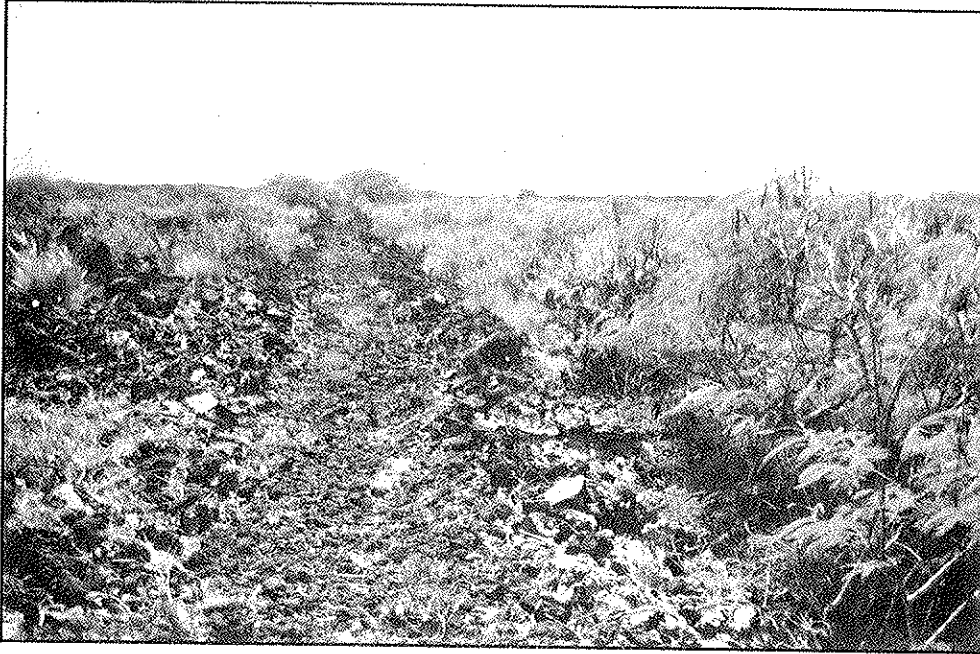
To address this situation, Congressional representatives have proposed legislation in both the House of Representatives and in the Senate. This legislation has passed in both the House and the Senate. If enacted, it would allow the National Park Service to establish the Na Hoa Pili O Kaloko-Honokōhau Advisory Commission.

**Management Zoning.** The following management zoning scheme is prescribed for Kaloko-Honokōhau National Historical Park. Park zoning is based on the legislative intent, the nature of park resources, and the recommendation contained in the study report, Spirit of Kaloko Hono-kō-hau calling for the park to be physically separated into appropriate use zones. The proposed management zoning scheme also reflects the intermix of natural and cultural resource values found at Kaloko-Honokōhau and the need to manage and protect both.

**Historic Preservation Subzone (569 acres).** Park management here is to be focused on the preservation, protection, and interpretation of the cultural resources and their setting. Treatment of cultural resources is to be preservation as is, or restoration to earlier appearances by the removal of later accretions and replacement of missing elements. Except for the two fishponds and adjacent wetlands, the anchialine ponds and the areas proposed for developments, this subzone is to encompass all of the park's land area and also the waters of 'Ai'ōpio fish trap.

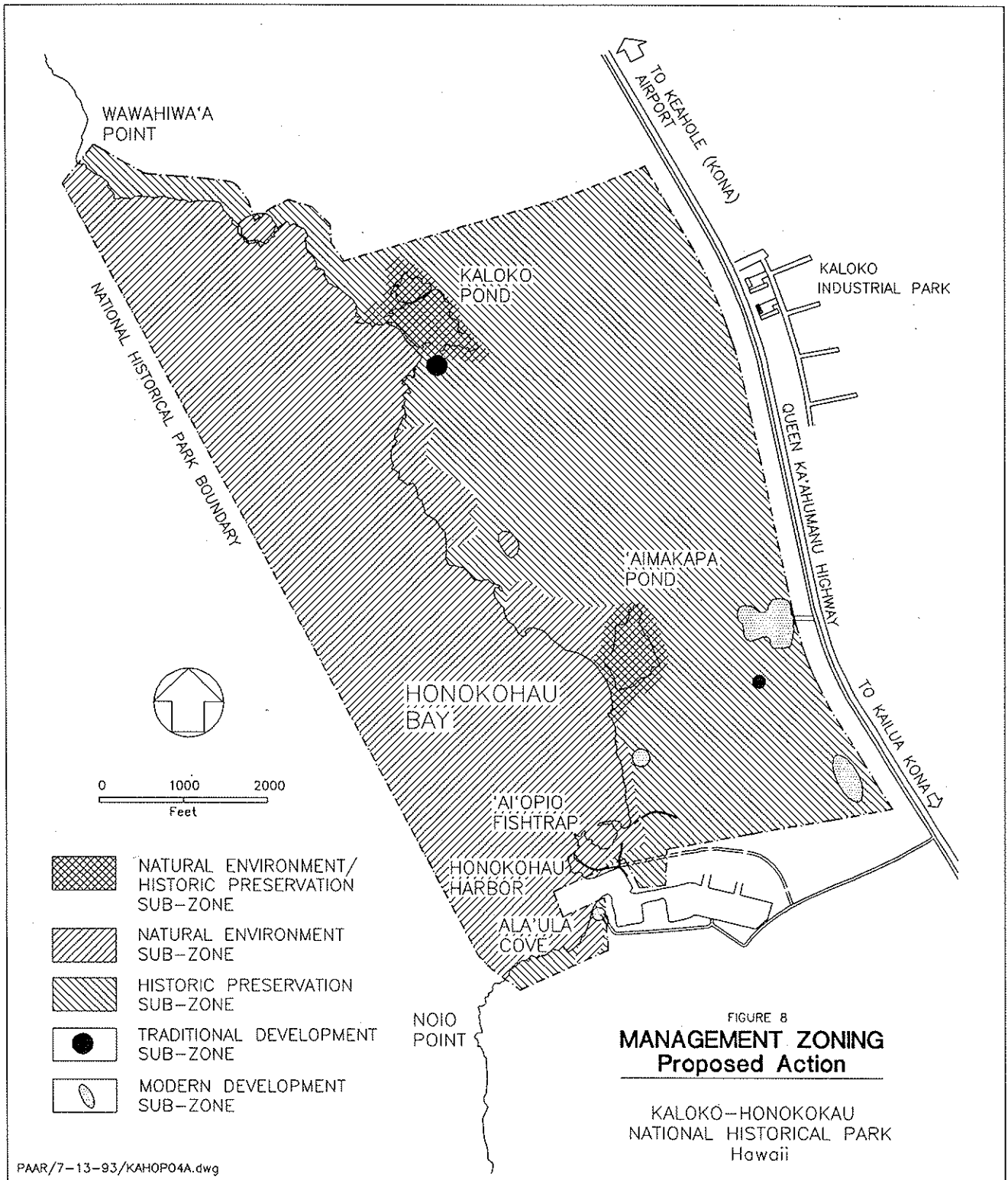
The non-historic dwellings located near the 'Ai'ōpio fish trap are also to be included in this subzone. Visitors in this zone would be scattered, allowing them the opportunity to experience solitude and the spiritual essence of Kaloko-Honokōhau.

**Natural Environment Subzone (530 acres).** This subzone is prescribed for all the offshore waters and coastal areas of the park owned by the State of Hawai'i. This subzone is also to encompass land areas taken up by the numerous anchialine ponds and pools within the park. The subzone includes sufficient lands around the ponds, to allow for resource management. Management emphasis in this subzone is to be the conservation of natural resources and processes. Only those recreational activities that are environmentally compatible will be permitted here.



Kaloko-Honokōhau contains about a one-mile segment of the historic Māmalahoa Trail. The trail is within the proposed Historic Preservation Subzone where cultural resources are to be preserved "as is," or restored to a known earlier appearance.

**Natural Environment/Historic Preservation Subzone (55 acres).** 'Aimakapā fishpond is clearly one of the most important cultural features found in the park, yet the pond and adjacent wetlands also provide essential habitat for two and potentially three native Hawaiian water birds — all listed as endangered species under the Endangered Species Act. Consequently, the prescribed zoning for the pond and the adjacent wetlands is to be an overlapping of both the Historic Preservation Subzone and the Natural Environment Subzone. In the case of 'Aimakapā, because of its importance as endangered species habitat, the management



emphasis is to be on natural resources. At Kaloko fishpond resource management strategies will focus on the physical restoration of the pond and the restoration of its capability to once again be a producing Hawaiian fishpond. Resource management strategies will also lead to restoring the potential of Kaloko fishpond and the adjacent wetlands to provide breeding habitat for the federally endangered Hawaiian coot and stilt. Management zoning in this particular area will also need to be an overlapping of the Natural Environment Subzone and the Historic Preservation Subzone. For Kaloko fishpond, however, the management emphasis is to be on cultural resources.

**Modern Development Subzone (10 acres).** This zone encompasses all those areas to be modified and developed for park facilities and visitor use, as well as associated lands directly modified as a result of their management and use. Included here are the visitor orientation center, visitor parking, rest rooms, administrative offices, the park maintenance facility, and the park entrance road. In this zone visitors would have the most contact with each other. There would be few opportunities in this zone to experience solitude.

**Traditional Development Subzone (2 acres).** The live-in cultural education complex is included in the Traditional Development Subzone because development here is to be low-key and Hawaiian in style and design, and would not substantially alter the park setting. Similarly, because of the nature of the development, the approximately one acre area for the construction of a replica Hawaiian village is also to be included in the Traditional Development Subzone. There would be less chance for visitors to encounter each other in this subzone than in the Modern Development Subzone and there would be some opportunity to experience solitude and the spiritual nature of these places.

**Estimated Development Costs.** Listed below are the estimated development costs to carry out the actions for park development under the proposed action.

The proposed developments listed below would be constructed in the following phased sequence:

- park entrance road and utilities
- main visitor parking
- visitor orientation center
- live-in cultural education complex
- Honokōhau beach rest rooms

- park-wide trail system
- replica Hawaiian village
- maintenance and housing complex

	<u>Gross Construction Costs</u>	<u>Construction Planning Costs</u>	<u>Total Project Costs</u>
<b>Construct Park Headquarters (Visitor Services/ Administrative Offices)</b>			
structure (8200 sf)	\$3,383,000	\$645,000	\$4,028,000
museum (1800 sf)			
visitor rest rooms (800 sf)			
lobby/information/sales area (1000 sf)			
park staff offices/work space (900 sf)			
archeologist/marine biologist lab (600 sf)			
cooperating association office/storage (200 sf)			
library (400 sf)			
storage (100 sf)			
prefabricated environmentally controlled curatorial storage/workroom/office (1400 sf)	77,000	15,000	92,000
superintendent's office (150 sf)			
administrative offices (300 sf)			
rest room (100 sf)			
conference room (250 sf)			
storage (100 sf)			
records space (100 sf)			
covered amphitheater, 200-seat (5,000 sf)	393,000	77,000	470,000
covered viewing deck (1000 sf)	78,000	15,000	93,000
air condition (8200 sf) orientation center/admin structure	65,000	11,000	76,000
<b>Museum Exhibits</b>	<b>885,000</b>	<b>168,000</b>	<b>1,053,000</b>
<b>Construct Main Visitor Parking</b>			
park entrance road	138,000	27,000	165,000
paved parking area (200 cars, 10 oversize)	608,000	116,000	724,000
entrance station (kiosk) and sign	68,000	12,000	80,000
<b>Construct Maintenance Facility (4,000 sf)</b>			
structure	450,000	113,000	563,000
work area (2000 sf)			
office space			
shop			
tool room			
rest room/locker room			
garage area (2000 sf)			
air condition work area (2000 sf)	17,000	5,000	22,000
gravel parking area (10 vehicles)	17,000	5,000	22,000

	<u>Gross</u> <u>Construction</u> <u>Costs</u>	<u>Construction</u> <u>Planning Costs</u>	<u>Total</u> <u>Project Costs</u>
perimeter fencing (450 lf, chain link), with sliding gate)	23,000	6,000	29,000
gravel road (1500 lf)	197,000	38,000	235,000
park housing	236,000	45,000	281,000
<b>Utilities for Visitor Orientation Center/ Maintenance Facility</b>			
underground sewer line (2,000 lf)	361,000	69,000	430,000
back flow preventer	17,000	5,000	22,000
sewage lift stations (2)	531,000	102,000	633,000
underground water line (2000 lf)	389,000	75,000	464,000
underground electrical (2000 lf)	256,000	53,000	309,000
<b>Develop Live-in Cultural Education Complex</b>			
overnight <i>halau</i>	126,000	24,000	150,000
shelters for working, teaching/learning, meetings, etc.	119,000	23,000	142,000
composting toilet	50,000	11,000	61,000
<b>Construct Replica of Hawaiian Village</b>			
Hawaiian type structures (6), including living history/cultural demonstration area	141,000	29,000	170,000
<b>Develop Park-wide Trail System (approximately 8 miles)</b>			
construct new trails and upgrade/rehabilitate existing unimproved roads, trails, and tracks to NPS standards	1,136,000	218,000	1,354,000
construct boardwalk (6' X 4500')	636,000	122,000	758,000
<b>Modification of Queen Ka'ahumanu Highway</b>			
southbound deceleration (right turn) lane	668,000	128,000	796,000
southbound acceleration lane			
northbound acceleration lane			
northbound deceleration (left turn storage) lane			
<b>Construct Rest Room, Honokohau Beach</b>			
underground water and sewer lines (2000 lf)	197,000	38,000	235,000
sewage lift station	588,000	114,000	702,000
underground electrical (2000 lf)	77,000	15,000	92,000
back flow preventer	285,000	57,000	342,000
	6,000	2,000	8,000
<b>Construct Visitor Parking and Trail Access, Ala'ula Cove Parking Area (10 cars)</b>			
	17,000	5,000	22,000
<b>Construct Boundary Fencing</b>			
southern line (3250 lf)	96,000	18,000	114,000

	<u>Gross Construction Costs</u>	<u>Construction Planning Costs</u>	<u>Total Project Costs</u>
Landscaping Visitor Orientation Center and Visitor Parking	275,000	53,000	328,000
Plant Screening Along Park Boundary	<u>98,000</u>	<u>20,000</u>	<u>118,000</u>
<b>Total Estimated Development Costs, Proposed Action</b>	<b>\$12,704,000</b>	<b>\$2,479,000</b>	<b>\$15,183,000</b>

**Operation and Maintenance.** Under the proposed action, the required levels of operation and maintenance costs to fund needed staff would be approximately \$1,220,000/year.

Park Staffing. In order to implement the proposed action, the below listed positions will be needed.

