CONTESTED IMAGES OF PLACE IN A MULTICULTURAL CONTEXT

THE AHUPUA`A OF KANAIO AND A`UAHI, MAUl

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI`I IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
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We certify that we have read this dissertation and that, in our opinion,
it is satisfactory in scope and quality
as a dissertation for the degree of Doctor of Philosophy in Geography.

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The people of Hawaii were thus a lowly people, one serving another, giving gifts to each other in the old days. To be arrogant was a terrible thing. But at the coming in of American education the humble time passed and a period of arrogance began which has persisted until now. But as for us, we regret the loss of our former ways. (Kepelino 1856 in Beckwith 1931: 150)

DEDICATION

To

All the people of Kanaio and A' uahi

for their efforts in making this work possible

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This research reflects the time and interest of all the residents of Kanaio and the `Ulupalakua Ranch *'ohana,* without whom there would be no dissertation. While any mistakes are my failings, any and all value to this document is due entirely to their effort. I am positive that I will be leaving people out of this list but be assured it is not intentional. A special *aroha* to those members of the community who have been willing to suffer through the drafts of this tome and provide criticisms and support: the Francis Santiago family, Yolanda and Margaret Uwekoolani, Jeff Munoz, Stuart Rice, Pardee and Sumner Erdman. Thank you for providing suggestions that could only improve the product. To others in Kanaio and A'uahi, particularly Everert and Adeline Mendez, Richard and Marina Brush, Fred Horvath, Russell Poaipuni, Bob Palm, Ben Mendez Sr., Bully DePonte, Marvin and Patty Smith, Stan and Prima, Ed Valletta, and Edward Uwekoolani, all my thanks. I hope you find the work interesting and useful in the future as a tool in discussions with various outside groups seeking to change Kanaio and A'uahi. All of you were always gracious with your time, interest and assistance, even when I was pounding around and asking inane questions during Christmas holidays and your rare days off. The concept of *aroha* is still alive and well in Kanaio. Thank you.

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Any mistakes and all interpretations are entirely the responsibility of the author.

NOTES ON CONVENTIONS

Orthography

The orthography used in this thesis follows that of Pukui and Elbert (1964). However this has not been employed on field information from the Chapman archives (1965-75) or direct quotations, which are left in their original form. As definition or provenance is unknown for most specific Kanaio-A`uahi place names they have also been left unmodified.

ABSTRACT

This study attempts to address an issue for long central to the geographic examination of the cultural landscape--the need for flexible theoretical constructs to incorporate the richness and diversity typical of cultural landscapes; and the inability of much of contemporary theory through its apparent mutual exclusivity, to meet these intellectual demands. This suggests the value of multidisciplinary projects to provide such scholarly diversity, but in most research situations this is not considered feasible by geographers or by social scientists in general.

An alternative is to alter the process under which theoretical constructs operate. The theory of grounded process (more usually, 'grounded theory') became an organizing structure under which conceptual constructs of diverse theoretical origin were deployed to understand a particular place. Grounded process and a series of intellectual constructs were assessed for how well they could apprehend both continuity and change in cultural landscapes over time. In particular, this research focused on two traditional and adjacent land units (*ahupua`a)* of Kanaio and A`uahi on the island of Maui in Hawai'i, from 1400 A.D. until the present.

Primary enquiries were conducted intermittently over a three year period, 1991-1993, and information collected from numerous sources, especially several rich and unpublished archival ones. An archaeological inventory was undertaken of surface materials, contemporary land use recorded, and in depth interviews conducted with residents and other knowledgeable persons. A personal diary was kept throughout the field work in Kanaio-A`uahi. The analysis of such a corpus of detailed material through the intellectual prisms of various theoretical constructs was the focus of the third and fourth chapters.

In prehistoric Hawai'i, land units (*ahupua`a*) such as Kanaio and A`uahi were viewed as separate and unique areas that over generations, each evolved into distinct cultural landscapes as distillations of resident world view. These cultural landscapes incorporated human modifications, the geomantic placement of religious structures, the location and underlying image of named places and, central to the process of ongoing integration and incorporation, a series of stories that linked all these attributes into a cohesive cultural image of a particular place (or land unit). As in other communities, dramatic shifts in the cultural landscapes of Kanaio and A`uahi occurred with the impacts of European contact and rapid socioeconomic change.

For different reasons, by 1965, permanent residents had abandoned these two land units for the first time in over 400 years. By 1995, there existed in these land units a complex interaction among several interested groups of residents, each of whom had their own clear and unique image of that particular place--in other words, a series of cultural landscapes of Kanaio and A`uahi operating simultaneously and within a single cultural setting.

All too frequently, past discussions of cultural landscape in human geography have been generalizations that imply a commonality of purpose and shared imagery. These reflected a stereotypic view of culture as a monolithic construct, all members of whom share a common world view, beliefs, values, and collective goals. Increasingly, geographers have become dissatisfied with the simplicity of this cultural model and its inability to apprehend the complexity of real-world problems. This study has applied a multi-conceptual approach to interpreting complex, and competitive, cultural landscapes held by various groups for Kanaio and A`uahi. The success of an analytical procedure based on the theory of grounded process demonstrates that a scholarly alternative exists to multidisciplinary research--a strategy that may achieve many of the same goals, but only with significantly greater costs in time and professional personnel.

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CHAPTER 1

INTRODUCTION TO AN ARGUMENT

The basic premise of this study is that a multidisciplinary research project is possible without involving specialists drawn from various disciplines. With sufficient background, it is possible to apply key concepts from a number of theoretical approaches to a specific regional question in cultural geography and obtain a more comprehensive analysis of the cultural landscapes over time than could be obtained from within a single theoretical framework.

The key to integrating the concepts from these diverse theoretical approaches is the use of grounded process. As this process depends on the fieldwork: portion of the research it lacks the rigid preconditions which frequently cripple more traditional projects based on the scientific method. Grounded process encourages a diversity of concepts and methodologies, based on an ability to build on a rich, comprehensive and integrated description of field enquiries and experiences.

The area chosen for study is on the southern slope of Haleakala, the mountain which makes up East Maui in the Hawaiian Island chain (map 1.1). Specifically, the area is the two adjoining *ahupua`a* ( traditional land units) of Kanaio and A`uahi, bounded land divisions which have existed from as early as the 15th century. These units were selected as they are located on either side of the boundary between two of the *moku* (the largest traditional land unit), each of which would contain many *ahupua`a* that defined polities in late precontact Hawai'i. Kanaio is the eastern-most *ahupua`a* in the *moku* of Honua`ula, while A`uahi is usually seen as the *ahupua`a* on the western boundary of the *moku* of Kahikinui. These two *ahupua`a* share many physiographic features, yet even upon initial examination show distinctive differences in terms of vegetation, landforms, moisture regimes, number and size of recent lava flows.

Most pertinent to a cultural landscape analysis is the difference in historic human habitation. There are no extant records from the 1840s and later indicating any permanent human occupation of A`uahi, and even at present, apart from one rental household, the *ahupua`a* is unoccupied except for cattle and goats. In contrast, Kanaio was continually occupied through the historic period, with Land Commission Award claims during the Great Mahele and subsequent land acquisitions. Permanent occupation continued in Kanaio town until the early 1960's. However, with demands for wage jobs and the difficulty of transportation, as this is the most isolated area of Maui, the last occupants moved away and until the mid 1970s Kanaio town became largely a ghost town of part-time occupants. At that time several individuals moved back to Kanaio and by 1993 a diverse community had been reestablished, containing a mix of traditional land-holding families in the *makai* (lower slope, towards the ocean) section of the town, and recent *haole* (middle-class Anglo) migrants in the *mauka* (upper slope, towards the heights) section.

This research has two goals. The first is to test the validity of applying a variety of concepts taken from diverse theoretical approaches to a research question focused on a specific place. In this case, it was changes in cultural landscapes over the last 400 years in the *ahupua`a* of Kanaio and A`uahi. By holding as a constant both the research focus and a particular place, the utility of concepts often seen as competitive could be evaluated for their ability to help develop an adequate description of the changing place that is Kanaio- A`uahi.

The second goal is more explicitly regional: to develop a detailed analysis of changes in the cultural landscapes of Kanaio-A`uahi and examine the varied cultural landscapes that exist today. In Hawai'i in general, and Maui in particular, land has always meant power (Cooper and Daws 1985). In contemporary Hawai'i various movements, especially those demanding some form of sovereignty relationship with the United States, are focused on the issue of land control.

Kanaio and A`uahi are at the center of one of these controversies, with competing interests including but not limited to:

The two major landowners, the State of-Hawaii and `Ulupalakua Ranch;

Other external interest groups, such as the Nature Conservancy;

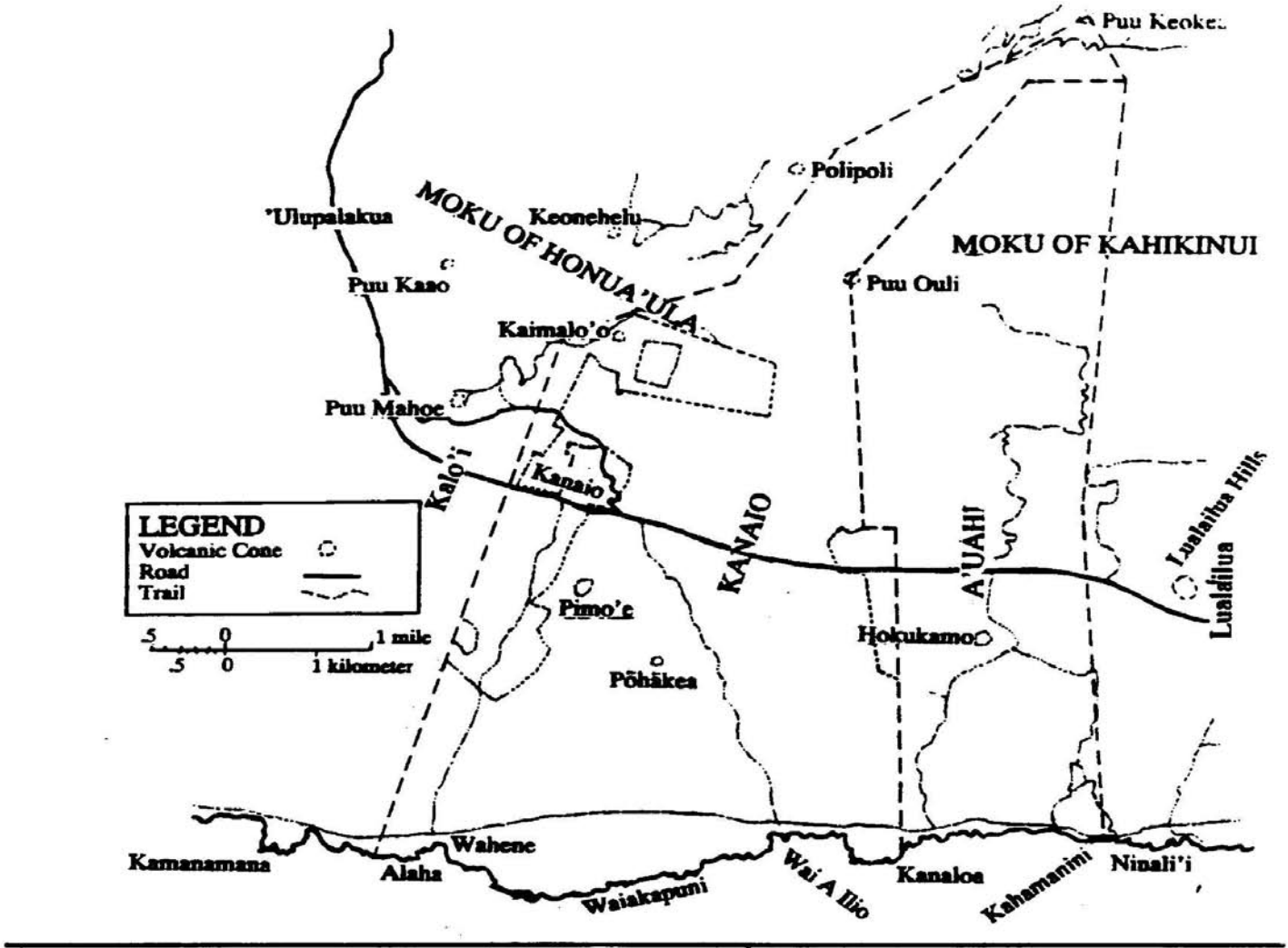
Small scale ranching interests, specifically the LLL Ranch;

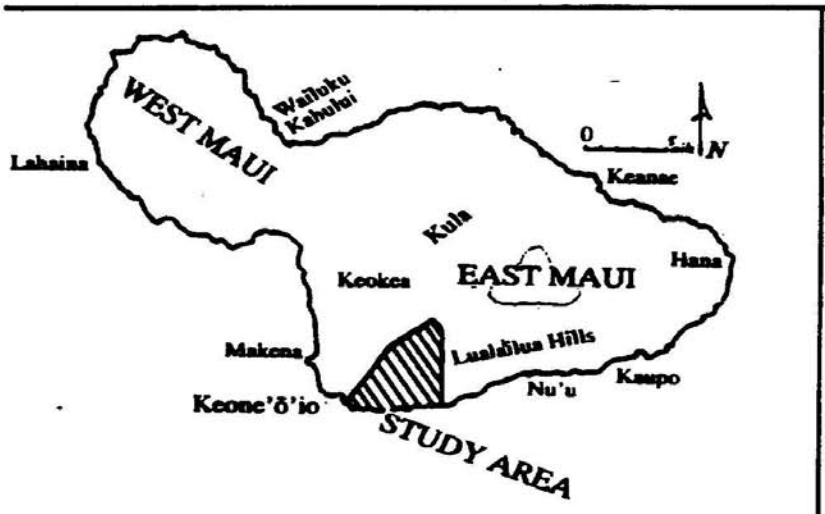
Local residents who claim genealogical and land claims back to the Kamehamehas;

Haole residents who claim spiritual interest in the land;

Recent *haole* from New Age religious groups, based in other sections of Maui but who value and use this area for rituals; and

Tourists passing through the area from east to west on the road from Hana to Kula.





MAP 1.1

AREA OF STUDY

R.B. 3/95

Panorama of west central Kanaio from Pu'u Mahoe.
The vegetation line in the center is the edge of the recent flow.

1.1. Continuation of panorama of lower west Kanaio from Pu'u Mahoe.
Pu'u Pōhākea is obscured behind Pu'u Pimo'e.

The second major goal, then, is to examine how the beliefs, values, and perceptions of these diverse groups have led to the complex cultural landscapes that make up contemporary Kanaio and A`uahi.

Techniques of Learning

Several factors constrained this field research. The major one was the inability to spend extended periods of time in the field (6-12 months) due to both cost and professional commitments. This meant that, from the outset, the more conventional sequence of archival-field-archival research had to be divided into a number of shorter phases (table 2.1). In many ways this turned out to be an advantage, especially when tied to the method of grounded process, which is very flexible in the sequence of information to be collected. It also facilitated short-term investigation of archival resources when questions arose during field enquiries, a situation that occurred several times during both the archaeological survey and interview phases.

An advantage to such a fragmented field schedule was that it allowed for written drafts to be brought back to Kanaio residents at the next phase of primary investigations. Consequently, immediate feedback from interested residents was possible--a key component of the project, since it showed good faith and a willingness to share information on the part of the researcher and addressed frequent criticism about outside investigators, a situation frequently lacking in the past. This triggered more interest in the project among members of the Kanaio- A`uahi community which in turn made further fieldwork, especially interviews, less difficult and more efficient.

The second constraint, in contrast, was relatively minor, considering that the research required persistent travel between the islands of O`ahu and Maui. Pertinent archival materials are divided fairly evenly between repositories on the two islands, with much critical material located on O`ahu. One of the few frustrations to such a commuter approach to a major research project was the inability to track down some rare archival material, especially early church records rumored to contain early census data for Kanaio.

Initial interest in Maui developed out of a sequence of positive and negative events, which by Kanaio standards would not be considered accidental, but designed. Initially, this research on changing cultural landscapes was planned for the Balade region of New Caledonia, but the collapse of funding possibilities placed the project in jeopardy. As a result, an alternative site was sought, one that had a good archival record or depth of oral tradition as well as a relatively untouched landscape able to reflect pre-European patterns of use. In addition, the existing population should include descendants of pre-European times to allow changing patterns of cultural landscapes to be examined with some prospect of continuity.

Earlier, during the summer of 1990, while conducting a field school for Chaminade University of Honolulu at Keone`o`io Historic Site, to map a scatter of residential sites on the shore at Keone`o`io (also called La Perouse), interest in the relationship of this village complex with surrounding areas led to a short trip *mauka* to Kanaio. In casual conversation with several residents and roadside observations, it became apparent that the area offered significant possibilities for a detailed and long-term archaeological study. This was shelved, to pursue field study in New Caledonia, but with problems of funding interest in Kanaio increased. In addition, several close contacts on Maui had expressed concern about a plan by the State of Hawaii to install a geothermal powerline over this section of the island without conducting research on possible impacts. Fear that a pristine area might be destroyed due to the needs of people on other islands in the State led to several requests for me to continue research in the area between Keone`o`io (to the west) and Nu`u (to the east).

As a result, a short reconnaissance of the area was conducted to both determine the feasibility of field research in an area roughly five times greater than was planned in New Caledonia and examine the availability of archival materials. Having previously conducted research in southeast Maui, at Makena, initial archival collection was fairly effortless and field reconnaissance reaffirmed the richness and largely undisturbed nature of much of both *ahupua`a*. But the major breakthrough came with the assistance of Mrs. Patricia Bacon and Ms. Elaine Jourdane of the department of ethnology at the Bishop Museum, who brought to my attention the field enquiries of Peter Chapman conducted in the 1960s. Though this work is occasionally cited in the archaeological literature, only a few short excavation reports have been published. This work was reputed to refer to areas considerably to the east of Kanaio-A`uahi but in fact a review of manuscript materials made it clear that here was an incredibly rich source of oral material directly linked to Kanaio.

The existence of Peter Chapman's research, in particular his interviews with Sam Po, combined with an unpublished manuscript by Elspeth Sterling of sites on Maui, led to the realization that perhaps the depth and quality of historical documentation for Kanaio-A`uahi was far superior to that for almost any other location on Maui if not for Hawai'i in total. Access to these rich and

Lower Kanaio Homestead property in foreground.
Ahupua'a boundary with A'uahi is the ridge at center, A'uahi to left.

1.2 Lower A'uahi from the Kanaio *ahupua'a* boundary.
Taken from the same location as above.

unpublished resources allowed the implementation of a more commuter approach to research. They, along with the great amount of archaeological research done at nearby Makena-Wailea, permitted field enquiries to be based on a rich foundation of prior work.

In general, initial field investigations in 1990 were to determine the accuracy of prior work and identify key areas of missing information (table 2.1). In particular, a description of the contemporary Kanaio community became a key goal of this project since existing materials provided superb details of life in the 1910-50 period, some idea of lifestyles around 1700, and little idea of Kanaio in the 1990s.

Before engaging in detailed interviews, increased familiarity with the place was critical. This also provided a convenient way of conducting an archaeological inventory. By becoming familiar with the area from walking all sections, and over the weeks being seen by community members when tramping around and engaging in casual conversation, more familiarity was gained with both the unique features of Kanaio-A`uahi landscapes and the contemporary community. A growing familiarity with the landscape was significant for two reasons. First, individuals tended to vary widely in their knowledge of Kanaio surroundings, but all were greatly interested. By trading stories of what had been seen during the survey, a comfortable dialog was established that simplified drawing out people's views of the place. Second was the fact of conducting tiring field surveys showed a serious commitment to understanding their place, rather than "just driving up and asking us what's here"--a charge leveled by several residents against some researchers who had visited the area in the past.

After completing the first phase of field investigations, a draft of preliminary findings was handed to various interested families when returning for the second phase of research (table 2.1). The ability to get residents' feedback on interim material, especially for errors or shortcomings while still in the field, was an unexpected advantage of commuter research that cannot be over emphasized. It also made a significant difference in interviews as both parties were able to discuss previous research projects, ask questions that arose from past work, and comment on changes since Sam Po's views of Kanaio during the 1930-50 period.

Several unanticipated astronomical events were also of value, in particular the famous partial eclipse of 1991 that was cloud covered, as well as a subsequent lunar eclipse. These led to several large and highly visible ceremonies by New Age devotees in Kanaio at site 121 (appendices I, III). In turn, they highlighted the importance of Kanaio for the New Age community of Maui, a significance that otherwise might have been overlooked or at least downplayed. Attendance and celebrations surrounding these two eclipses helped to clarify distinctive variations between Upper Kanaio residents, many of whom described themselves as members of the New Age belief system, and New Age followers elsewhere on Maui (appendix III). This is an obvious distinction, once noted, but in hindsight only became obvious with the large ceremonies conducted in Kanaio by outsiders, and subsequent comments by residents.

As before, drafts of all sections of the research were sent to selected residents for comment and critique--at least those willing to suffer through innumerable versions. One result has been a continuing dialog with the community, rather than the more common pattern in field research of "here today and gone forever". It has allowed the community some ability to say how information might be included in the dissertation and, for example, has led to some intentional distortion of site locations to protect archaeological sites, which residents feared might be destroyed if too accurately described. This small attempt at making more even the exchange of information also has allowed residents to use it, to deal with local issues of land control and access, with both each other and external agencies.

The Place

Kanaio and A`uahi convey a set of strong visual and emotional images, in large part notable for their clarity. Nothing seems small, except people out here. The area stands as a compelling statement of the various forces of creation and destruction that define Hawai'i. Driving east from Kula, on the main highway, one passes 'Ulupalakua and the bucolic green slopes that frequently look like the world's largest golf course. Then there is a descent through an area of low visibility and thick brush, the road narrows down to one and a half lanes, and the number of potholes increases dramatically. Suddenly a small rise is topped and the view opens up, and you are astride of what appears to be a recent *`a`a* flow, with large twisted boulders of black lava, but most striking is the view to the horizon. On the left suddenly can be seen the whole line of cinder cones (from Pu`u Mahoe proceeding *mauka:* map 1.1) marching up the side of Haleakala and often, depending on the time and season, the summit of Haleakala (plates 1.1, 1.2). Due east the horizon curves along the side of Haleakala to the cinder cones of Lualailua Hills and to the right are the closer cones of Hokukamo and Pohakea (plates 1.3, 1.5). But dominant on the lower slopes, standing like a monument on the slope, is Pu`u Pimoe

(plate 1.4). Just over the top of Pu`u Pimoe you can see the Big Island, Hawai'i, and the ocean being squeezed through the narrow channel.

On closer inspection several features become apparent. One is the continuation of the bucolic, golf-course green, which is now *mauka* and continues into A`uahi (plate 1.6). A second is the presence of scattered houses and clumps of trees in an area that looks significantly greener, and somewhat down slope a highly visible little white building (the Honua`ula Church) (plate 1.1). To the right, the flow on which you are standing, relatively narrow at the highway, fans out down slope so much that the entire coastline is covered in recent lava, with no trees or greenery to interrupt the view of waves battering the shore (plates 1.2, 1.8). But most striking is the combination of visibility and speed. The exceptional clarity of the sky means that even small details can be some distance away. Almost constant winds move clouds and mist at a rapid pace. The result can leave one hypnotized, as cloud and mist formations twist, turn, wrap around cinder cones, break up, and reform in an instant (plate 1.3). Squalls come marching down the channel and disappear, seemingly in minutes. Cloud and mist build up at Lualailua Hills, touch your face, and vanish almost before it is possible to react. The whole impression is of what Europeans would consider the distinctions between people and nature, but that seems totally inappropriate. It is better seen as forces in dialog and contest, playing out over the landscape, with resident humans no more substantial than the goats, cattle, or *wiliwili.* It is a place where *akua* are still active, and the present is limited to airplanes flying overhead and cars in transit from Kula to Hana.

Driving further a series of shifting landscapes, almost strobe-like, meet the eye-- from lava to sparse pasture; then corrals, cattle and houses (plate 1.4); then suddenly even more twisted, recent black lava; with equal suddenness, A`uahi and clumps of *wiliwili,* seeming to stand patiently in family groups alongside the road waiting for something (plate 1.2). In gulches are clusters of vegetation that, upon close inspection, are confusing because much is unfamiliar (plate 1.6). Stunted trees with leaves oddly shaped or colored, bushes that turn into vines.

It is at this point that the basic visual contradiction of Kanaio-A`uahi becomes clear, the factor that makes it such as fascinating yet private place. While there are the striking vistas stretching in almost any direction into the distance, there is also another place. This one consists of small, nearly invisible places-a small clump to three trees and bushes with several goats standing motionless nearby; a boulder of recent *`a`a* the size of a small house, black when looked at quickly, but more closely is seen to contain red, yellow and white, in shapes and colors twisting across its surface. This vast landscape becomes a world of small details and small things, a world of quiet where cows can be heard several kilometers away and at l800 feet the surf at night a whole kilometer distant.

It is a world celebrating the small and the subtle. Big is found elsewhere, in the distance or where the traffic of busy tourists goes. Kanaio-A`uahi is a private place, prone to introspection and escape. It is a place which allows people, but does not welcome them. As commonly noted by residents, if you are supposed to stay, you will; it is a place that decides if a person should remain; if you should go, nightmares will persist till you leave (Chapter 4). People are present in Kanaio, but they do not control this place and recent flows are reminders of its power. It is stark compared to almost any other section of Maui, yet it has its own beauty-invisible from a car, requiring patience and effort to witness. One has to work hard to be in and of Kanaio and A`uahi. It is a place that appears easy to describe, yet defies feeble academic exercises such as momentary dissertations generated by short-term academic experts. Most people passing through will never notice the place, except for the bleak, long vistas. For those who do notice and show interest, the place leaves a mark. All residents in Kanaio-A`uahi, past and present, share this. It is a different place, a unique place. It is a place where the cultural landscapes were generated in dialog with other elements and forces, spiritual and natural.

The Physical Environments of Kanaio and A`uahi

Traveling past 'Ulupalakua Ranch and reaching the open barren slopes of Haleakala. Kanaio and A`uahi are the first two complete *ahupua`a* encountered. The distinctively strong and persistent winds, so much a feature of the area, are a determining factor for many of it's physical attributes. An ever-changing pattern of cloud and wind conceals the fact that this section of Maui is located in the rain shadow of Haleakala and thus does not enjoy most of the rain dropped only fifteen miles away. Upon closer observation, it becomes clear that much of this cloud actually brushes over the slopes at higher elevations (plate 1.3) to provide a pattern of mist that, as discussed later, was so critical to the early agricultural success of Kanaio and A`uahi.

The initial impression of striking vistas and limited vegetation also is accurate, for both water and suitable soils are in shore supply. As Sahara et al. (1967:3) have noted, this area consists largely of lithosols with occasional pockets *(kipuka)* of red desert soils:

Cloud-mist patterns on a typical afternoon. This is in central A'uahi looking *mauka* towards Kahikinui.

1.3 Lower A'uahi, in the new flow material at the 600 foot elevation.

Pu'u Pimo'e from the main highway. The National Guard firing range can be seen at the base of the cone.

1.4 Small *wiliwili kīpuka* in east Kanaio at 1500 foot elevation, looking towards Hokukamo and lower A'uahi.

The East Maui lands, on the leeward slopes of Haleakala from Kaupo to Ulupalakua, are geologically young in comparison with the rest of Maui. The dominant soils in this section are in the Lithosol Group, including the lava lands with little or no soil development ... However, there are small islands of deep, well-developed, stony and non-stony soils of the Low Humic, Latosol and Red Desert Groups. The lack of an adequate supply of moisture, natural or applied, precludes the use of these soil areas for cultivation. Slopes are mostly gentle to strongly sloping and deeply eroded; gulches are few. Climate approaches that of a tropical locale, being warm and sunny. Median annual rainfall ranges between 20 and 40 inches but is seasonal in its annual distribution. The principal land use is low intensity grazing. Water for livestock must be pumped from adjacent areas.

The contrast between the green upper slopes, in the mist zone, and the very dry lower slopes is one of the region's most striking aspects (plates 1.1 and 1.2). What little rainfall comes for Kanaio and A`uahi is experienced during the Kona season, when weakened tradewinds mean that rain is borne by winds from the west or southwest. Even with this seasonal rainfall, sections of the two *ahupua`a* lying at less than 2000 feet receive on average less than thirty inches a year, compared with forty inches on the upper slopes (excluding cloud-mist precipitation). This lack of heavy rain and associated erosion is responsible for the absence of deep dissection seen on this portion of Haleakala's slopes--in part the origin of the feeling of distance as slopes curve smoothly as far as the eye can see (Kyselka and Lanterman 1980, Macdonald et al 1970).

Features that dominate immediate vistas are numerous and recent cinder cones on the flanks of Haleakala (plates 1.4 and 1.5). Landforms that make up Kanaio and A`uahi result from the Hana Volcanic Series, the last major period of volcanic activity on Haleakala. The line of cinder cones, stretching like a fence up the side of Haleakala (map 1.1) and separate Kanaio from the more verdant *ahupua'a* of Kalo`i to the west, are the visible portions of the Southwest Rift Zone of Haleakala (Kyselka and Lanterman 1980, Macdonald et al 1970). This last area of volcanic activity for Haleakala resulted in burying the material of the Kula Series underneath a thick layer of Hina lavas. As Steams (1942:96) notes:

The Hana lavas are predominantly aa, but a few pahoehoe flows are found here and there, especially near the vents, where thin, very vesicular lava is common ... Many of the flows extend nine miles from the top of the summit depression to the coast and then for an unknown distance under the sea. Features common to all fresh aa flows are found such as long winding channels through which the rivers of molten lava flowed and balls of wrapped clinger called "bombes de roulement."

The near-perfect symmetry of the cinder cones reflects both the recent nature of these events and the lack of heavy rainfall. Equally important to residents is the high permeability of these lavas which, as Steams (1942) notes, results in very little surface water since rainfall disappears almost immediately into the underlying lava. This is true even in those sections of Haleakala, at Hana, exposed to rainfall as heavy as 200 inches a year. Highly permeable lavas in Kanaio and A`uahi this explains both the lack of erosional patterns from visible streams and the large number of springs at various locations, especially on the coast, where water absorbed upslope reappears.

The first image of recent volcanic activity is accurate, much of the visible lava resulting from the last active phase of Haleakala. The fresh and very rugged flow of *a`a* that separates Kanaio from A`uahi may date from as recently as the eighteenth century (Steams 1942, Stokes 1936). In fact, material from the two most recent flows defines much of the surface area of Kanaio, as the western boundary with Kalo`i, along the line of cinder cones (the Southwest Rift), as well as much of the Kanaio coastline (plate 1.8), is covered with material from the 1790 flow that inundated Keone`o`io (La Perouse Bay)(Stokes 1936). One of the most subtle differences between the two *ahupua`a* is that A`uahi is relatively older than Kanaio (compare plates 1.1 and 1.2), except for a recent flow emanating from Hokukamo and possibly a sympathetic eruption of the early 1700s just as in eastern Kanaio.

Patterns of simultaneous eruptions are typical of Hawaiian volcanic activity and perhaps were responsible for the series of flows from Pu`u Pimoe and Pu`u Pohakea (Steams 1942; also plate 1.8).

At lower elevations in Kanaio and A`uahi, a distinctive visual image is provided by the *kipuka* of small oases of vegetation that relieve the monotony of black and red *`a`a.* In some cases, they are remnant patches of high ground uncovered by the most recent events, while in other cases they appear to be low pockets of ash loess, possibly from the Hokukamo eruption, which seems to have generated considerable amounts of red ash. The location of many *kipuka,* both in terms of elevation and downwind of the main Hokukamo vent, support this interpretation.

Central A'uahi and Hokukamo from the Kanaio *ahupua'a* boundary at the highway.

1.5 Central A'uahi looking *mauka* with Pu'u Ouli on the horizon. Taken from the Lualaʻilua *ahupua'a* boundary wall near the highway.

Vegetation pattern in central A'uahi. Note change to open terrain at higher elevations.

1.6 *Kīpuka* in east Kanaio-west A'uahi. Note native vegetation in the low. This is the pattern noted by Resnick (1977) common to the area.

Photo 1.7

The 1790s flow, the western boundary of Kanaio, consists of material from a vent on the *makai* face of Keonehunehune, substantially *mauka* of Pu`u Mahoe which Stearns (1942) misinterpreted as having started at Pu`u Mahoe. This flow poured between the cones of Pu`u Mahoe and Kaimalo`o, covering the western portion of Kanaio (and adjoining Kalo`i) from 3000 feet to sea level and to a depth of twenty to thirty feet in the upper sections, perhaps even more at lower elevations. Possibly simultaneously, possibly earlier, the vent on the *makai* side of Pu`u Pimoe erupted and another major flow completely inundated the coastal area of Kanaio (plate 1.8). Perhaps concurrent with the Pu`u Pimoe eruption was the one from the vent at Hokukamo, which covered most of the coastal zone to the eastern edge of A`uahi. This series of closely-spaced, eruptive phases mean that lower elevations, especially in Kanaio, are significantly younger geologically than the upper slopes and consequently have much less erosion or soil-development. As most of this volcanic activity appears to have occurred in the past 400 years, it occurred after the initial occupation of East Maui by Hawaiians and must have left a powerful impression on them.

The Human-Environment Dialog

The area encompassed by the *ahupua`a* of Kanaio and A`uahi follows the traditional logic behind such Hawaiian land divisions: stretching from the immediate offshore area to the highest immediate area, most frequently in the form of a pie slice from shore *(makai)* to uplands *(mauka)*. In most cases, this *mauka-makai* orientation was followed as the most equitable way for the population of each *ahupua`a* to exploit all available resources. As each *ahupua`a* was seen to be largely self-sufficient, in terms of basic survival, their size and orientation tended to reflect resource availability. Less common is the visible boundary between Kanaio and A`uahi, since recent lava flows define each *ahupua`a*.

Kanaio and A`uahi are distinctive in a less visible fashion, being allocated to different districts *(moku)* of the island of Maui, with Kanaio the easternmost *ahupua`a* of the *moku* of Honua`ula and A`uahi the westernmost *ahupua`a* of the *moku* of Kahikinui. There is no dear documentation that describes the conditions for defining *moku* boundaries but, since frequently they were separate political entities, presumably boundaries would have some physical definition. This is not the case for the upper slopes of Kanaio and A`uahi, though it would be true of Kanaio compared to Kalo`i to the west, or A`uahi to the east when contrasted with major changes in landform in Lualailua Hills.

Along with the separation to two *moku,* the upper boundaries of Kanaio and A`uahi are conspicuously different (map 1.1). The upper boundary of A`uahi ends at the 6400 foot level on the south slope of Haleakala, whereas the *ahupua`a* of Kanaio continues beyond the lip of Haleakala and into the crater proper at Pohaku Palaha, on the eastern rim. *Ahupua`a* to the west of Kanaio in Honua`ula do not extend this far north, and end at roughly the same elevation as A`uahi. No explanation was found for this unusual northward extension of Kanaio beyond the rim of Haleakala.

One of the assumptions upon which this study was based was that visible variations in land use and occupation might exist, between the two *ahupua`a,* being located in different *moku* and consequently before 1800 falling within different administrative control. However, it should be noted that the oral tradition is somewhat contradictory on the designation of *moku,* as at least two sources consider A`uahi to be within Honua`ula (along with Kanaio) and thus the eastern boundary of A`uahi with Lualailua Hills the *moku* boundary with Kahikinui (Sterling 1966-71). Yet most sources and older maps all indicate the *moku* boundary, at least from the 1870s, to be between Kanaio and A`uahi (Sterling 1966-71).

The area is one of sun, *`a`a* lava and strong winds tempered by areas of excellent soil and groves of *wiliwili, kukui* and *'ohia.* Recent flows access limits access to the shoreline, with few beaches and all exposed to dramatic surf from the near-constant currents of the `Alenuihaha Channel. There is access to deep water at the shoreline, which drops off rapidly, so that people are lured by the excellent fishing into very dangerous and at times fatal conditions of high surf and strong currents.

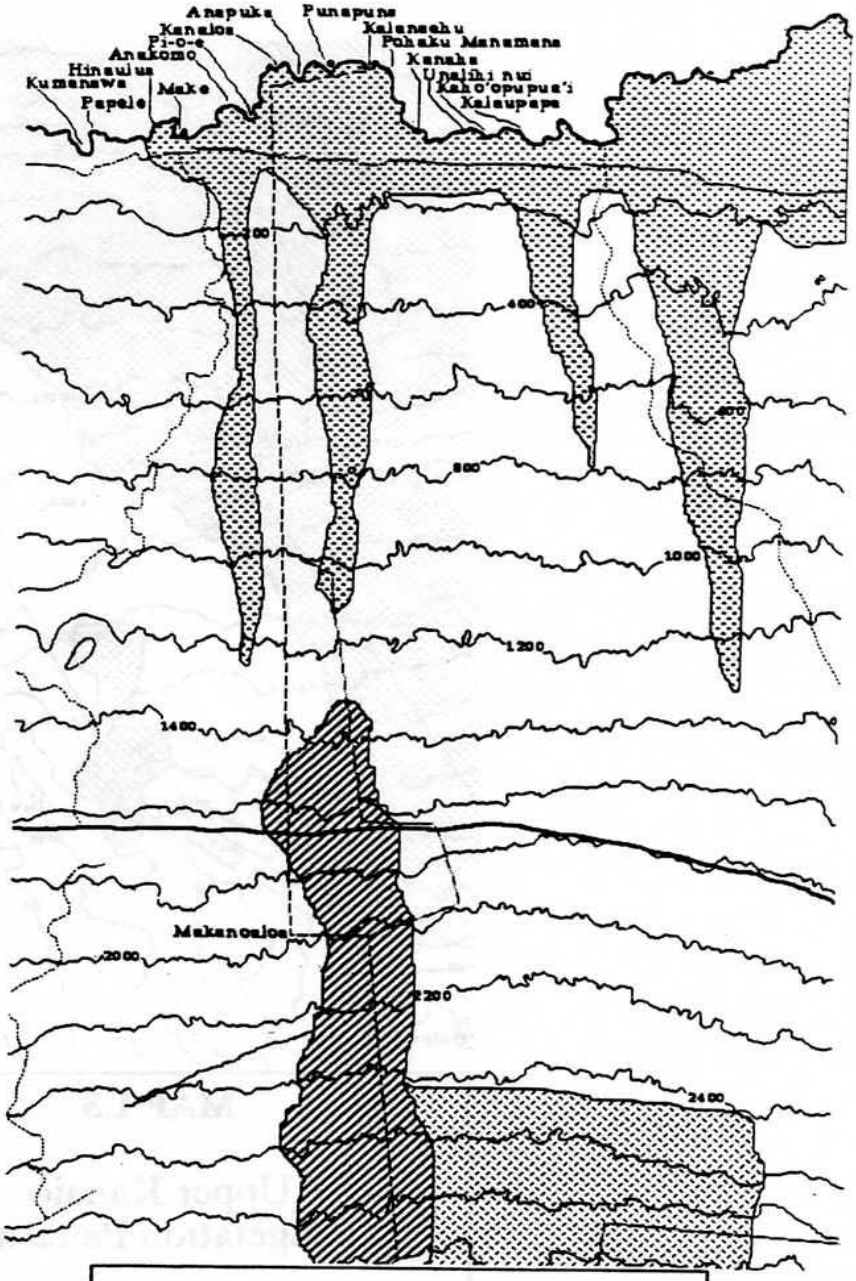
Although the two *ahupua`a* have many aspects in common, not surprising given their shared boundary and similar location on Haleakala, there are distinct but subtle physiographic differences:

a. Kanaio has a more consistent and gentle slope to the ocean, while that of A`uahi is more abrupt;

b. At middle and upper elevations, A`uahi has less material from recent *`a`a* and thus presents a more verdant appearance than much of Kanaio at the same elevation;

c. Casual observation suggests that A`uahi gets significantly more precipitation from tradewind showers than Kanaio, whose rainfall occurs in the upper sections of the Southwest Rift Zone which does not extend into A`uahi;

d. Forest and bush cover give the two *ahupua`a* a distinctively different look, for A`uahi has significantly more of the dry forest



MAP 1.2

Lower A'uahi- Kanaio Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest

R.B. 9/94

Makai to the coast. This view is from Pōhākea. Note the impact of the recent flows on coastal vegetation.

1.8 The coastal pattern. This is 50 meters from the shore near the Pi'ilani Trail at Makee (site 207) looking back to the west.

groves and its middle elevations are dominated by *wiliwili*;

e. With the exception of one family, recent human activity and most residents are located in middle and upper Kanaio.

The feeling of uniqueness which, like the constant wind, seems to permeate this area is not illusory. Since Rock's (1913) survey of indigenous trees and shrubs, it has been acknowledged that A`uahi contains one of the highest proportions of indigenous dryland forest left in the Hawaiian Islands (Lamb 1981). The survival of such a large number appears mainly to reflect the recent dates of the lava flows, which must have been so destructive of the very forest they now preserve. Small *kipuka,* isolated in fields of bare lava, are thus protected from much of the wanton grazing by goats and cattle which destroyed the former expanse of dry forest. Of the uniqueness of the Kanaio-A`uahi dry forest, Cuddihy and Stone (1990:15-16) write:

Forests are the primary natural vegetation of the leeward montane zone. Dry forests are found on leeward East Maui and Hawai`i and are dominated by one or more of the following tree species: *koa* (Acacia koa), *mamane* (Sophora chrysophylla), the ubiquitous *'ohi' a* (Metrosideros polymorpha), and the much more rarely, *`akoko* (Chamasesyce olowaluana, C. celastroides). Particularly rich examples of montane dry forests occur at Auwahi on Maui and Pu`uwa`awa`a on the slopes of Hualalai, Hawai`i... More mesic sections of these rare forests have *olopua* (Nestegis sandwicensis) as an important component. While changes (particularly the invasion of alien grasses) have occurred in the 75 years since Rock's work in these areas and may have resulted in drier conditions, both sites remain notable for great tree species diversity and the presence of rare plants. Based on the current and historical distribution of tree species characteristic of the Auwahi forest, Medeiros et al speculated that a rich dry forest once had a much greater distribution on the south slope of Haleakala.

As the dry forest was a key factor in the successful Hawaiian exploitation of Kanaio and A`uahi, it is fortunate that Jane Resnick (1977) did some very detailed work on the dry forests of the Honua`ula section of Maui, inclusive of Kanaio. Her analysis of the composition and extent of forest precontact, the implications for water collection and agricultural use, and the impact of uncontrolled grazing animals in the early nineteenth century are critical to this research.

Forest, Mist, and Rainfall

Resnick divided the forest into components, lower (less than 2600 feet) and upper (2600-4000 feet) elevations (plates 1.6, 1.7, 1.9). The dominant individuals in the lower forest were identified as the *wiliwili* (Erythrina sandwicensis). Until the mid-nineteenth century the *naio* (Myoporum sandwicense) probably responsible for the naming of Kanaio *(ka-naio),* was a major component of the forest, but is now rare.

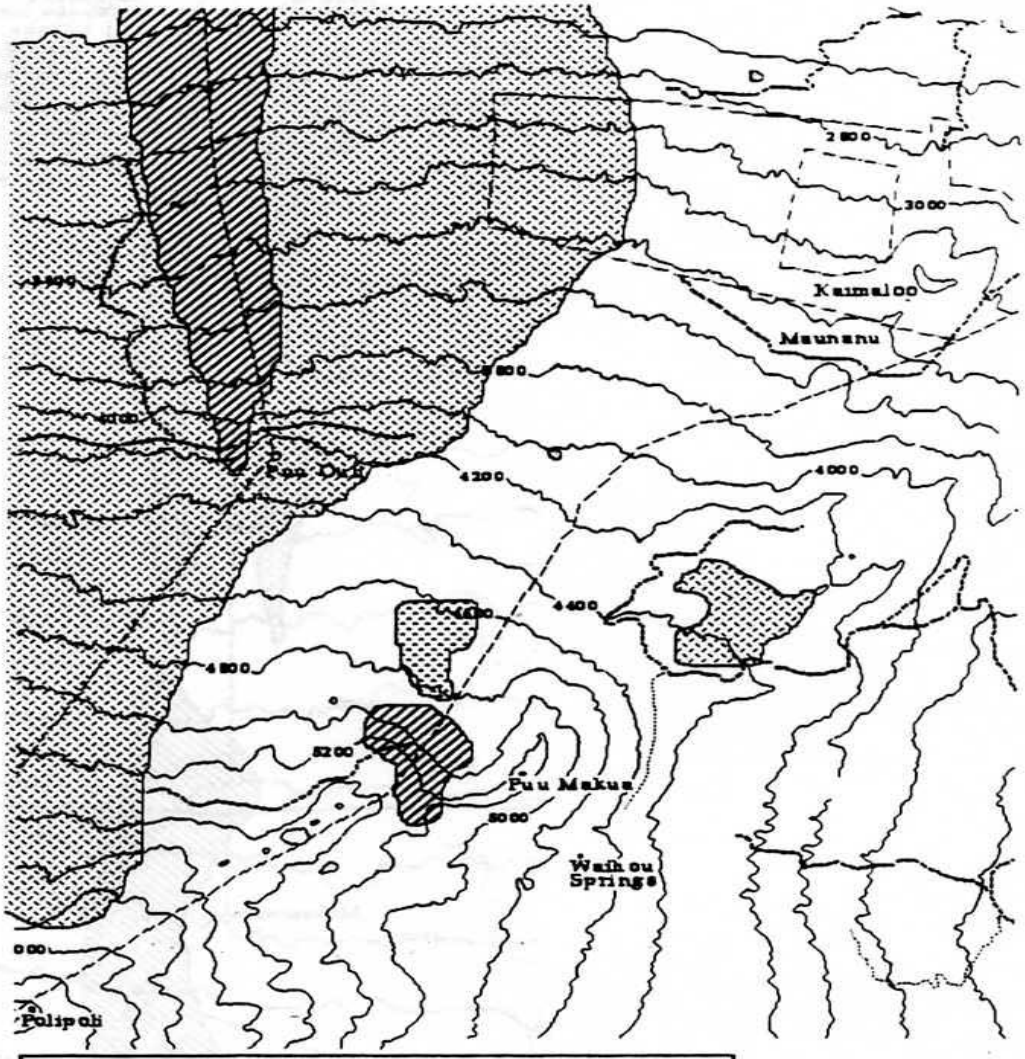
At least in wet gulches, the only species which appears to be extending its range under patterns of modem grazing, is the *kukui* (Nototrichium sp..). Other species noted by Resnick include the *lama* (Diospyros ferrea) *alahee* (Camhium odorarum), *akoko* (Euphorbia celastroides), *ohe makai* (Reynoldsia sandwicensis), *hao* (Rauvolfia sp..), *aiea* (Nothocestrum latifolium), *`ala`a* (Planchonella sp..), and *kolea* (Myrsine sp.). Resnick noted several native vines, *huehue* (Cocculus Ferrandianus) and Bonamia Menziesii along with the native poppy (Argemone glauca.) as being very common. Today, these have been overwhelmed in almost all of Kanaio and A`uahi by a variety of introduced exotics, with which they have been unable to compete, largely due to herds of goats and cattle (plates 1.2, 1.4, 1.5, 1.6).

The impact of grazing animals is especially noticeable in lower areas where water is more scarce and fodder is more limited, so that it is impossible to underestimate the pressures on these plant populations of large goat herds (estimated in 1992 at upwards of 100-200 animals). Botanists have suggested that curtailing grazing activities might revitalize the forest sections and that the endemic species might recover some of their former vitality by fencing forest sections or eradicating goats and cattle (R. Silva interview 1992).

The upper forest includes most of the species noted above, apart from *wiliwili,* but includes several others that are unique, such as *'Ohia / ehua* (Metrosideros collina.) and *halapepe* (Pleomele aurea)(plate 1.9), both of which are dominant species in the remnant forests. *Halapepe* has been heavily affected by goats, who butt against the trunk to knock it over, and in summer 1992 fully one quarter of *halapepe* were thus affected, most in the few weeks prior to being surveyed.

Other tree species at upper elevations include *iliahi* (Santalum sp.), now small in number after the great sandalwood harvesting of the early nineteenth century, the *olupua* (Osmanthus sandwicensis), *maua* (Xylosma hawaiiensis), *kauila* (Alphitonia ponderosa),

Photo 1.9



MAP 1.3

Upper Kanaio Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest
R.B. 9/94

and *heau* (Exocarpus sp.)(plate 1.9). Above 3000 feet, *mamani* (Sophora chrysophylla) becomes a dominant species while understory growth includes *`ulei* (Osteomeles anchyllidifolia), *pukiawe* (Stryphelia tameiameiae), *maile* (Alyxia olivaeformia), Wikstroemia, Sicyos and Korthalsella species.

Even in A`uahi, these species are located only in areas of relative isolation, either within the small *kipuka* on the *`a`a* flows or on the flows themselves (plates 1.6, 1.9). Such locations are less attractive to both goats and cattle, for easier and more plentiful grazing usually is available elsewhere. However, in drought conditions experienced during the past ten years, these relatively protected areas have become havens for goat herds, which have severely decimated remnant forest far beyond Resnick's pessimistic predictions in 1977.

Gauged rainfall at various stations in this section of Honua`ula indicate that yearly rainfall is extremely variable, from a low of 14.6 inches in 1957 to a high of 73.8 inches during 1931 at 'Ulupalakua Ranch. A more significant factor, emphasized throughout Resnick's (1977:14) analysis of the dry forest, is the almost daily development of cloud on the slopes (plate 1.3):

...the cover of convectional clouds which forms over the rift zone, often extending in a band above the line of cinder cones, from high up on the slopes of Haleakala down to the coast at Puu Olai and Cape Kinau. Clouds also form on the upper slopes of the mountain, and commonly descend to become afternoon fog about 2500' elevation. Such clouds and fog not only slow down the rate of evapotranspiration, but may also supply considerable moisture by fog drip, the direct interception of cloud moisture by the vegetation. Fog drip under trees can have a favorable influence on the surrounding herbaceous vegetation...

Resnick notes that research in areas with similar patterns of cloud or fog indicates that upwards of forty to sixty percent of collected moisture may be from fog drip. A key factor in her discussion was that elevation was a key factor, with relatively minor increases in altitude resulting in significant increases in the collection of moisture. This led Resnick (1977:16) to suggest that changes in vegetation pattern, especially loss of tree cover, might result in significant losses in water collection--perhaps as high as forty per cent of available water in Kanaio:

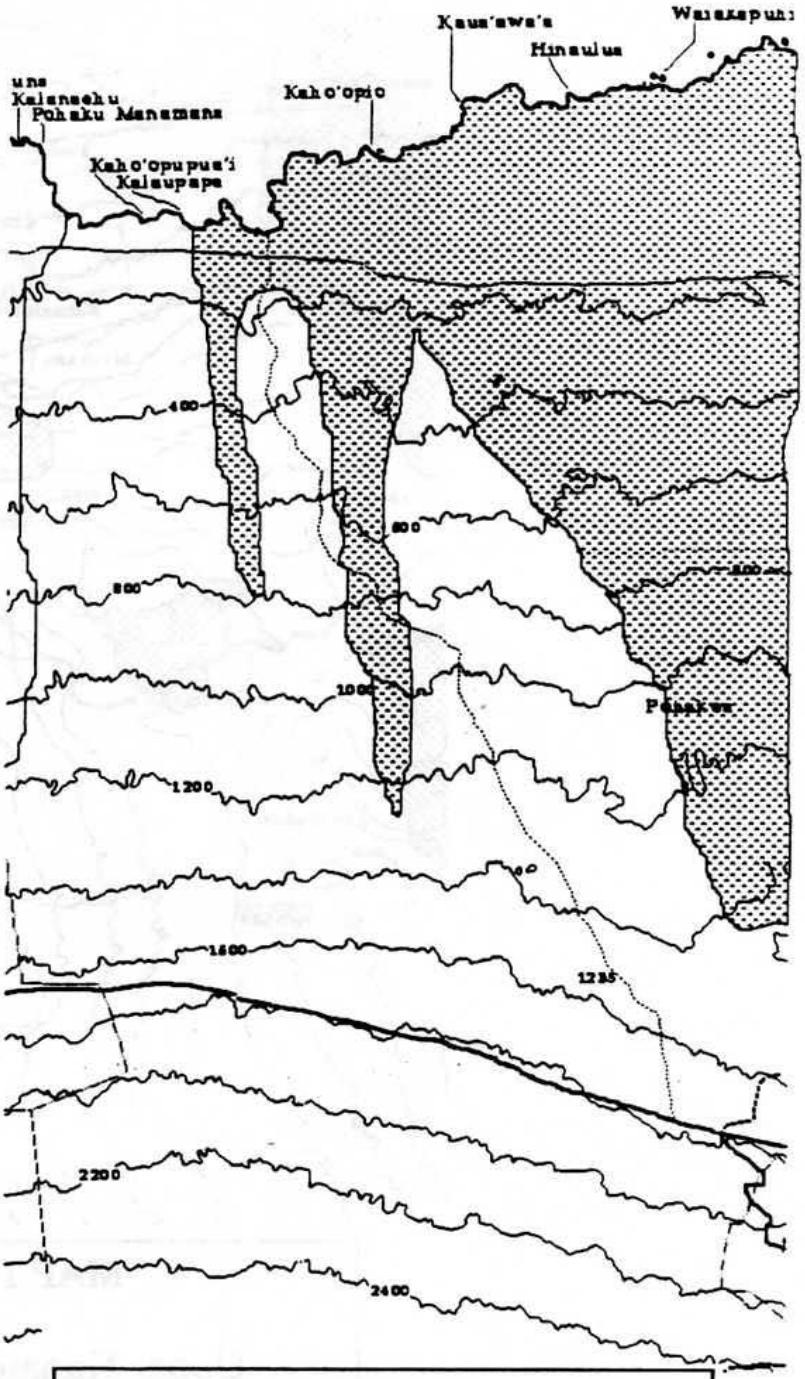
...as early as 1859…one source mentioned that sugar cane grew well at Ulupalakua without irrigation, 'although it rarely rains in that neighborhood.' the writer commented that 'heavy dews' were the source of the moistures. The effects of fog drip are most pronounced over the rift zone, where the clouds are centered, and at higher elevations, where fog is common.

...Trees, with their greater height and larger surface area for intercepting droplets, are able to catch substantially more moisture than shrubs and herbs. The vegetation, then, may have a significant effect on water availability, and it is possible that the removal of the native forest, which had taken place around Ulupalakua by about the 1850's, may have had a detrimental effect on the moisture regime.

If Resnick's premise is correct, then the major limiting factor fur forest growth in middle and upper Kanaio-A`uahi may have been less surface water and more lack of soil and suitable areas for tree growth and introduced plantings. In the lower slopes toward the coast any major changes in vegetation pattern would be unlikely, as any increase in water volume would be on site rather than transported down slope. Thus the area at an elevation below 900 feet, where most indicators of prior dry forest are absent, has received roughly the same levels of precipitation for most of the period of human occupation. The only possible variation in water supply would be from underground sources at the coast in the form of springs. In upland areas, major springs either have been intentionally destroyed during a range war of the 1800's according to one informant, or already tapped for ranching activities and thus without their traditional volume.

In the coastal area according to interviews with Sam Po (Chapman and Sterling 1968, 1966, Pukui and Williamson 1966, Sterling 1968, 1967a, 1967b, Newman and Sterling 1971), there are a significant number of springs or upwellings of freshwater near the shore which during the period immediately before contact supported relatively dense coastal populations with an associated agricultural system.

Resnick's work suggests that logging in the nineteenth century, initially for sandalwood and later for firewood and lumber, though widely blamed for loss of forest habitat (Handy and Handy 1972), was in reality only partly responsible. More decisive was the impact of large grazing animals:



MAP 1.4

Lower Kanaio Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest
R.B. 9/94

The livestock probably affected the forests not so much by eating seedlings, although that was important, as by trampling. The original dry forest probably had two main layers: an understory of ferns and shrubs, and a tree layer. Initially, the animals would have destroyed the undergrowth by grazing and trampling. This would have altered the moisture regime at ground level, and have exposed the soil to erosive forces. The soil in Honua`ula becomes very loose and powdery in dry weather, and it is easy to see how the shallow roots of the native trees could have been damaged (Resnick 1977:25-6).

The implications for any contemporary preservation or reintroduction of the dry forest are obvious. The definition of the new Kanaio Natural Area Reserve is problematic until it has been fenced to keep out grazing animals, but this had not occurred by 1994 (Chapter 4). Any goal to return Kanaio and A`uahi to vegetation regime similar to that of the nineteenth century, before the loss of forest species became established, would involve a number of economic and social decisions. Today, large-scale ranching accounts for the only formal economic enterprise in both *ahupua`a.*

From scattered sources, Resnick has been able to reconstruct the dry forest cover of Kanaio-A`uahi prior to the impact of major grazing. An 1853 account noted "grass and other herbs growing everywhere" on the slope between `Ulupalakua and Makena, a settlement on the coast (Resnick 1977:56). This lower slope was probably covered with the indigenous pili grass, which was common as late as the beginning of this century (Sterling 1966-71), whereas at present imported grasses, weeds, koa haole, and kiawe dominate.

The middle elevations, between about 2000 feet and 5000 feet in elevation, were the main area of food cultivation through the eighteenth century. Even into the middle of the next century, despite heavy use the forest apparently was to some extent intact, as Resnick (1977:22) notes:

In some places, at least, the forest was well developed. Mrs. H.P. Baldwin, daughter of the missionary W.P. Alexander, lived at Ulupalakua as a child in about 1856. In the 1920's, Mrs. Baldwin, then in her 90's, told Mrs. Inez Ashdown that when she was a child the forest around Puu Makua was "as thick as the forest at Hana" [Pu`u Makua is in Kaloi and its lower slopes define the west *ahupua`a* boundary of Kanaio) ...

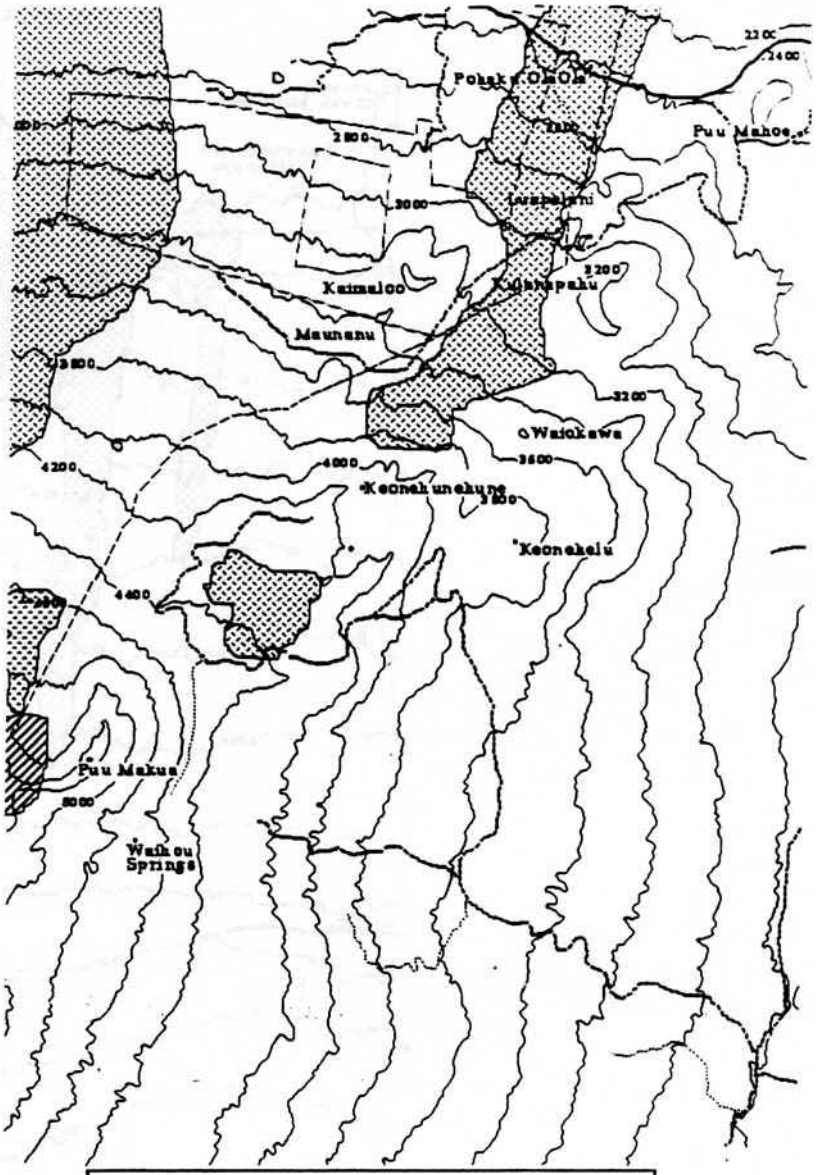
And again:

Another clue may come from the name of Puu Mahoe, a large cinder cone near Ulupalakua. The name may refer to the *mahoe* tree (Alectl:yon macrococcum), which is now very rare. These species, with the possible exception of the *kopiku,* are still present in the small remaining stand of native dry forest to the east, in Kanaio and Auwahi, along with a great variety of other species. Even now, this forest, located on aa lava, is thick and well-developed in a few protected areas. It seems likely that most pares of the district at comparable elevations (over about 1700') could have been at least equally well-forested... (Resnick 1977 :23).

It should be remembered that the term "dry forest" does not imply a dense canopy of trees covering the slopes. In all likelihood, in the past, the forest on the middle slopes of Kanaio-A`uahi was simply a much expanded form of remnants left today--groves of mixed tree species, with a constituent understory interspersed by open areas covered lightly in grasses and occasional bare rock. This clumping pattern would have been less evident above an elevation of 1800 feet where the forest was continuous, as in the rest of Kahikinui. Below this level decreases in mist along with less good soil would mean that groves would be more dispersed, likely disappearing altogether around 900 feet. Major groves would have existed about the cinder cones of Pu`u Pimoe, Pu`u Pohakea and Pu`u Hokukamo, for such features provide protective windbreaks and sources for springs. That the Kanaio-A`uahi region was never the verdant green forest of the Hana area is obvious from a line in an Hawaiian chant, describing places in Honua`ula:

'O *Auwahi wela i ka la`i*.
Auwahi hot in the sun (Pukui et al. 1974:276).

The vista presented to a traveler in 1750 would have been strikingly different from that today. The upper slopes which nowadays are coated in a thick layer of kudzu grass, would have been covered more than 200 years ago in a sparse, but constant tree



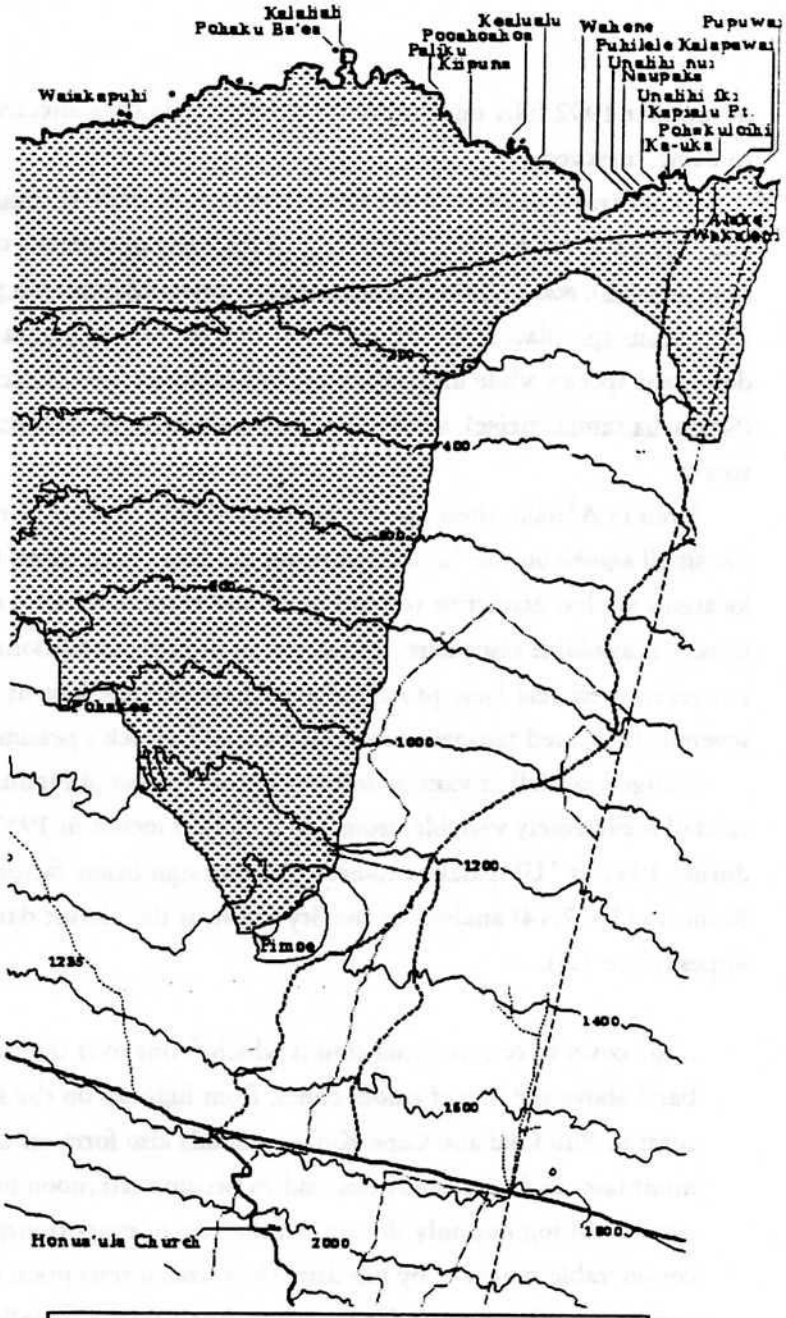
MAP 1.5

Upper Kanaio-Kalo'i Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest
R.B. 9/94

cover. The intermediate slopes would have had clusters of trees, interrupted by more extensive areas of open grasses and bare *`a`a.* The lower slopes, perhaps captured in the above chant, would have been closest to their contemporary appearance; bare *`a`a* except for dense groves around the bases of cinder cones and in scattered *kipuka.* Changing patterns of control by Hawaiians of Kanaio-A`uahi are mirrored in a sequence of previous landscapes: the precontact, that the Hawaiian so manipulated to their collective advantage into the nineteenth century, as well as the striking changes between eighteenth century and contemporary, late twentieth century landscapes.

A series of explanatory tools are required in a place as physically and culturally complex to understand changing patterns of land use, the cultural belief and community attitudes underlying such use, and how all these manifest themselves on the physical landscape as contemporary Kanaio-A`uahi. The need to preserve complexity while providing coherent explanation demands a different way of interpreting cultural landscapes.



MAP 1.6

Lower Kanaio-Kalo'i Vegetation Patterns

Recent Lava
Native Dry Scrub
Native Dry Forest

R.B. 9/94

CHAPTER 2

APPROACHES TO CULTURAL GEOGRAPHY

The *ahupua`a* of Kanaio and A`uahi present a complex pattern of past use and contemporary contest among interested parties. Rather than a simple, monopolistic cultural landscape reflecting cohesive and continuous cultural patterns over time, the area under examination represents a complex tangle of many cultural landscapes that are not only visible on the physical landscape but also carried as images by the various resident groups. Traditionally, a single theoretical approach would be applied to analyze the multifarious cultural landscapes of Kanaio and A`uahi, yet the various approaches applied by cultural geographers do not seem adequate to the task. A major discussion has arisen within cultural geography that the complexity of its subject matter has not been apprehended adequately by any particular theoretical approach, nor appears to be in the near future (Gregory et al 1994, Duncan and Ley 1993, Cloke, Philo and Sadler 1991, Johnson 1990, Kobayashi and Mackenzie 1989, Bird 1989, Norton 1989a, Driver 1988).

Part of the problem lies with the assumption that theoretical approaches and their more general, contextual logical paradigms are mutually antagonistic or contradictory. Some cultural geographers agree, as Johnston (1990: 102) states:

> The philosophies of realism, humanistic social science, and empiricism/positivism are incompatible, therefore; they make different assumptions about what we can know, and how we can know it. Thus an integration of the three (or two of the three) is not possible. Many believe that it is because they confuse philosophy (and its associated epistemology and ontology) with methodology ... neither quantification nor textual interpretation is allied to a single philosophy, and as ways of exploring data they have wide usage. But a science is defined by its goals, by its definition of knowledge and the uses associated with it, not by its procedures. So we must choose between the sciences, and then select the relevant procedures for the work which we undertake in that context.

The alternative, and gradually more acceptable position, is based on two premises. The first, represented by Duncan and Ley (1993), is that Johnston's argument is too narrow and exclusive. The second is that a multiplicity of theoretical approaches or concepts are needed to deal adequately with the complex patterns found in any cultural landscape:

> One of the most pronounced features of contemporary cultural geography... has been the way in which dominant notions of truth have been challenged and disrupted. There is a growing recognition that knowledge is multiple and positional, that there are many ways of seeing and reading the landscape. One of the foci of contemporary cultural geography, therefore, is the investigation of multiple discourses about place and identity, uncovering previously ignored senses of place and visions of the landscape constructed by the powerless rather than the powerful (McDowell 1994: 163)

> The modernist ambiance of the subject has been severely punctured, and we have entered an era of epistemological relativism and methodological pluralism. The question of whether some coherence can or should be imposed upon this intellectual fragmentation is itself a central issue of contention (Gregory et alI994:5)

The difficulty of studying a process as complex as cultural landscape is compounded further by a persistent lack of agreement about what constitutes the cultural landscape, much less how to go about examining it (McDowell 1994, Duncan and Ley 1993, Bird 1989). Complicating this intellectual Gordian Knot is the increasing interest displayed by related disciplines in spatial patterns and cultural landscapes--especially in anthropology (Rodman 1993), archaeology (Renfrew 1984), and architecture through semiotics of the built environment--which on the one hand has encouraged many new ways of viewing the cultural landscape but on the other seen a major loss of theoretical coherency in its analyses. In this regard, the cultural landscape can be viewed as a modem example of the fable of the blind men and the elephant. The elephant, the cultural landscape, has been the subject of study from a variety of disciplines, primarily geography. Despite considerable effort, the result has been a surprising lack of theoretical or intellectual consensus on what even constitutes the cultural landscape. In turn, this suggests that research in this area has become overly constrained by too much theoretical and methodological parochialism. The result is that while we have excellent descriptions and

analyses of various appendages of the elephant (legs, trunk, tail), we have yet to achieve a coherent description or explanation of the whole elephant.

A common refrain among the recent theoretical critique occurring within both geography in general, and cultural geography in particular is the need for diverse approaches to a given subject rather than merely a single view (Ellen 1988, Wagstaff 1987, Hodder 1987, Grossman 1977). However, this encouragement of interdisciplinary research as a means to develop a more comprehensive view of the elephant becomes embedded in yet another set of practical and philosophical constraints. The costs of retaining multiple specialists for a single project, whether from within cultural geography (as multi-theoretical) or from several disciplines (as interdisciplinary) is unrealistic when related to the practicalities of primary field research. In addition, the strategy of a single researcher simultaneously using several theoretical approaches has been criticized as an intellectual contradiction (Johnston 1990). This points to a paradox that especially bedevils the anglophone tradition of theoretical specificity, when the object of study cannot be apprehended within the limitations inherent of a single approach.

At least implicitly, the anglophone tradition within geography strives for scientific objectivity and impartial rationality. In espousing reductionism, it emphasizes specificity at the cost of holistic analysis (Ley 1989, Driver 1988). A major source of intellectual dialog in many disciplines, not least anglophone geography, is the paradox between rigorous and specific training and holistic analysis, especially when the latter is seen to be the defining uniqueness of a geographical approach. From the standpoint of the concept of cultural landscape, this same vigorous and complex debate is evident in how cultural geography should approach its subject matter, both theoretically and methodologically (Gregory et al 1994, Duncan and Ley 1993, Cloke, Philo and Sadler 1991, Johnson 1990, Bird 1989).

Much of the current fascination in geography with existentialist and postmodernist approaches and knowledge is in reaction to limitations of theoretical specificity, especially when combined with the narrow quantitative methodologies of geography during the 1960s and 1970s (Gregory 1994, McDowell 1994). The result, however, has been further conceptual fragmentation rather than the emergence of a theoretical focus around which the discipline could develop a consensus (Gregory et a11994, Cloke, Philo and Sadler 1991, Bird 1989, Norton 1989). Some geographers like Johnston (1990) feel that such a conceptual coherence or convergence is not feasible, given the philosophical underpinnings of different theoretical approaches. Others (Duncan and Ley 1993) consider diversity possible, while remaining silent about how this could be achieved other than by borrowing concepts from different theoretical approaches and consequently ignoring Johnston's concerns. Perhaps the critical issue is more in the process by which analysis and explanation proceeds rather than the choice of a particular theoretical approach. Some of this same reasoning is evident among those, like the Cambridge sociologist, Anthony Giddens (Bird 1989, Giddens 1983, 1979), who have suggested that structuration theory may provide one answer.

Within the francophone tradition of geography an entirely different discussion has taken place, based on an intellectual premise that does not assume or emphasize specificity.

Amongst the French, geographic enquiry is not wedded to the search for general laws, so that complex theoretical statement and analysis is able to flourish within a regional context (Bonnemaison 1985, 1981, Doumenge 1966, Huetz de Lemps 1989, 1977). The concept of *genres de vie,* as articulated by Vidal de la Blache around the turn of the century, is consistent with Geertz's (1973) more recent call for 'thick description' and the various arguments in favor of structuration theory (Bird 1989, Norton 1989). This is especially true when comparing the anglophone and francophone traditions of geographical enquiry in the Pacific.

In emphasizing regionality, the francophone tradition has reduced the role of theoretical and methodological considerations to the supportive one of generating data and analysis within a regional context frequently termed the *milieux* (Claval 1988). By focusing on the diverse nature of the place, thus making theory and methodology subordinate to spatial interests, some of the intellectual pitfalls of the anglophone tradition have been avoided. However, as has been noted by Claval (1988), the francophone tradition itself has become entangled with a different set of problems, notably a lack of theoretical or interpretive rigor.

The origins of the French geographical tradition are the works of Lucien Febvre, Paul Vidal de la Blache, and Jean Brunhes. Febvre's possibilism, as adapted by Vidal de la Blache, emphasized the options and possibilities that human populations could apply to the environment. Unlike much writing in the anglophone tradition, it largely avoided incipient forms of environmental determinism and consequently had a tremendous impact on French work in the Pacific. A second theme, the emphasis on compiling regional descriptions, is exemplified by the work of Jean Brunhes, another student of Vidal de la Blache. To separate these two distinct threads within Vidalian thinking, in this study the more descriptive regional compilations typical of Jean Brunhes will be included within the *milieux* concept, while the *genres de vie* concept will be limited to more synthetic and interpretive work that derived

from possibilism (as in Lucien Febvre). Note the common philosophical and intellectual basis for these two distinct manners of thinking, which in turn was the basis for shared information and collaborative enquiry--a situation less frequently encountered amongst scholars within the anglophone tradition (Brookfield 1984).

While the francophone tradition has been a major force in geographical research in the study of Pacific island societies, few anglophone researchers saw the theoretical possibilities or options. Throughout the Pacific, the *milieux* school is linked partly to a much older intellectual fascination with compilations and more contemporary French geographies have been influenced heavily by the monumental amount of work by such individuals as Jacques Barrau, Francois Doumenge (1966), and Alain Huetz de Lemps (1966, 1957). Despite first impressions, none of these are simple compilations of numbers and descriptions, but rather creative syntheses of extant material. This attribute reflects a major concern of the Vidalian tradition, that interpretation was central even within descriptive compilations.

From the 1960s, the atlas replaced the *encycl6pedie* as the format favored by the *milieux* school. This fostered a descriptive orientation, in many ways closer to the anglophone tradition in Australia with its emphasis on quantitative elements, especially in a demographic or economic context, than to the more interpretive stance of the Vidalian school. Regional atlases were seen most strongly in the work of Jean-Francois Dupon on New Caledonia (1981); Jean Fages' work on tourism and migration in French Polynesia and New Caledonia (1975a, 1975b, 1974, 1972, 1970); the last of the summary compilations on the Pacific, by Alain Huetz de Lemps (1966); Christian Huetz de Lemps works, some on ethnic groups but in the main dealing with tourism in Hawai`i (1989, 1980, 1977, 1972, 1964); and Jean-Claude Roux's studies on migration and ethnic identity in New Caledonia (1985, 1974). These studies reflect the impact of the "quantitative revolution" on the *milieux* school an attempt to achieve synthetic analysis within a descriptive frame of numerical reference.

Research on Hawai`i within the *milieux* school has been limited, but significant, notably in the research of the Bordeaux geographer, Christian Huetz de Lemps. While some of his work has dealt with ethnicity and acculturation in Hawai`i, on Chinese immigrants (1972), his main focus has been on the changing impacts of tourism (1989, 1980, 1977, 1964). While firmly based in the *milieux* approach the flexibility of his treatment when discussing impacts of tourism could be interpreted as fitting more within the *genres de vie* school--except that these two main strands of Vidalian thought are not nearly as intellectually exclusive from one another as suggested by anglophone commentators (Berdoulay 1989, Buttimer 1982, 1976) as typifies anglophone work.

Genres de vie, the other major branch of Vidalian thinking, has been defined as that theoretical order based on:

> ...the products and reflections of a civilisation, represented the integrated result of physical, historical, and social influences surrounding man's relation to milieu in particular places... originally defined as that unified, functionally organized pattern of living which characterized certain livelihood groups. Livelihood provided the label, the core around which a whole network of physical, social and psychological bonds evolved... A notion which echoed the integration of place, livelihood, and social organization in a group's daily life (Buttimer 1971:53)

At the same time, during the past forty years that the *milieux* approach became somewhat more parochial (Claval 1985, 1984b), so the *genres de vie* approach has provided a great deal of theoretical freedom, whether pursued, within a regional context or the dynamic of human-environment interrelationships. A large body of research has been generated on cultural landscapes in the Pacific, especially Melanesia, by French geographers, anthropologists, and sociologists, among whom the amount of dialog and cooperation leads to highly sophisticated views about the interactions between people and place. Notable were the studies of Vanuatu, especially Tanna, by the humanist Joel Bonnemaison (1985a, 1985b, 1984, 1981, 1980, 1979, 1977), complemented by equally influential work on rural cultural landscapes and perception in New Caledonia by the geographer Jean-Pierre Doumenge (1982, 1975), the seminal works in the Pacific on perception of land and ritual landscapes in Melanesia by the anthropologist Maurice Leenhardt (1970, 1947, 1930), and a number of studies of ethnic identity, empowerment and land control by the sociologist Alain Saussol (1988, 1986, 1984, 1979). The success of French practitioners of *genres de vie* in the Pacific provides excellent examples of the advantages of this approach notably the great innovativeness and flexibility in scholarly approach and practical implementation for research topics. Research on Hawai`i in this tradition has not been adopted by anglophone practitioners, nor have French geographers explicitly in the tradition extended their area of examination to include Hawai`i.

A key advantage of the *genre de vie* approach is how the region under study is emphasized, instead of theoretical validation and methodological issues so dominant in most research undertaken within the anglophone tradition. This allows geographers the

flexibility to apply various methods and incorporate information across disciplines with less overt criticism than often occurs among anglophone practitioners. Conversely, a common complaint of the Vidalian tradition, and of French regional geographic work in general (Claval 1984a), is that such flexibility tends to constrain material within the regional context and thus to discourage broader synthetic work. On balance, and given its emphasis on the regional nature of geographical enquiry, the *genres de vie* approach provides a logical point of departure for research on Kanaio-A`uahi. A theoretical compass was a necessary precondition for the process of grounded theory to be followed and collection of field data to proceed.

Theory of Grounded Process

The present lack of clarity and unity in either the theoretical goals or levels of analysis prevalent with cultural geography and the study of cultural landscapes requires new applications of processual concepts. One alternative is grounded theory, originally developed in sociology by Glaser and Strauss (1967). The term 'theory' has been used already to summarize different modes of explanation. As a result in this study, and to limit semantic confusion, 'grounded theory' will be termed 'the theory of grounded process'.

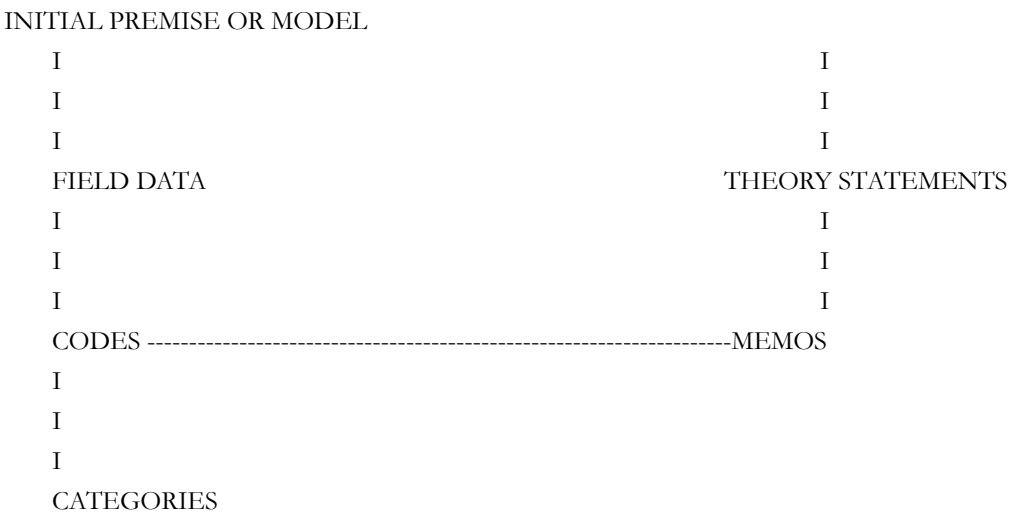


FIGURE 2.1

THE PROCESS OF GROUNDED THEORY

At its most basic, the theory of grounded process argues that much of the contemporary impasse in intellectual development is the uncritical use and implicit premises (Zelinsky 1975). As Charmaz (1983) observes, grounded process is intended to replace the scientific method as the scholarly strategy by which research is conducted. The key conceptual benefit follows the premise that from data, should derive theoretical articulation and validation, rather than the reverse--as in logical positivism. The result is a very different structure to the research process. According to Charmaz (1983:110-113):

First, data collection and analysis move forward simultaneously. Since grounded theory theorists develop theory from within the data directly, they need to work with solid, rich data that can be used to elicit thorough development of analytic issues... Additionally, they check and fill out emerging ideas by collecting further data. These strategies serve to strengthen both the quality of data and the ideas developed from it.

Second, both the processes and products of research are shaped from the data rather than from preconceived logically deduced

theoretical frameworks. Grounded theorists rely heavily on studying their data and reading in other fields during the initial stages of research... From the grounded theory perspective, researchers who pour their data into someone else's theoretical framework or substantive analysis add little innovation and also may perpetuate ideas that could be further refined, transcended, or discarded.

Third, grounded theorists do not follow the traditional quantitative canons of verification. They do, however, check their developing ideas with further specific observations, make systematic comparisons between observations, and, often, take their research beyond the confines of one topic, setting, or issue ... From the grounded theory perspective, the method does not preclude verification by other types of researchers; it merely indicates a division of labor.

Fourth, not only do grounded theorists study process, they assume that making theoretical sense of social life is itself a process... In keeping with their foundations in pragmatism, then, grounded theorists aim to develop fresh theoretical interpretations of the data rather than explicitly aim fur any final or complete interpretation of it.

The grounded process involves a series of interwoven stages, which operate in a feedback cycle (Figure 2.1):

The Initial Premise or Model: A major criticism of grounded theorists is that, at the most extreme, they ignore the presuppositions to any research and tend to view field data as empirically pristine. In reality, as noted by existentialists among others, all research is biased by the preconceptions of researcher, informant, and participant (Duncan and Ley 1993, Emerson 1983). The excesses of the grounded process can be avoided by making explicit at the outset the initial focus of research, which include the goal, and questions defining the field research. This constrains, at least in the first stages, both the forms of field data collected and the structure of the subsequent analysis.

Field Data: As Charmaz (1983:110) noted, the goal is for 'solid, rich data'. Being crucial in deriving future theoretical constructs, the variety and amount of data collected are critical. It is at this stage that introducing a variety of methods and strategies has value, in that it produces a wide range of information for reflection and manipulation.

Coda: Ordered patterns of data through various codes, is the third and key stage of grounded process. These codes are initial and frequently discarded, but serve to provide flexible models, within which information can be organized. To be effective, the researcher must order field data from as many viewpoints as possible, which in turn emphasizes the great utility of considering concepts embedded within various theoretical approaches. Each concept requires that data be ordered in a different manner, which in turn requires the researcher to approach the data from unanticipated directions and consequently reduce, if not entirely eliminate individual bias. When coding appears to provide some plausible patterns of order, initial memos are generated.

Memos: Charmaz (1983: 120) comments that the fourth phase:

Memos are written elaborations of ideas about the data and the coded categories. Memos represent the development of codes from which they are derived... By making memos systematically while coding, the researcher fills out and builds the categories...

Through memo writing the questions developed in coding are put into analytic context. The memo tells what the code is about; it raises the code to a category to be treated analytically.

The key step in the production of memos as the initial phase of explicating field data, is the manipulation of codes into topics. Each memo should describe both the prediction and the likely parameters. It may also include predictions on how other, uncollected data, may relate to that already part of the memo. As memos are generated, so different ways of acquiring more field data become evident. New data are incorporated into new or existing codes and thus assess the validity of memos. These more focused codes are called categories.

Categories: The intellectual dialog between data, early coding, and preliminary attempts at organizing data into memos yield categories. Memos are an attempt at interim explanations of initial codes based on available data, which in turn suggests directions for further collection in the field. As this process continues, new information is introduced, and codes become more refined and focused, these categories represent an intermediate stage in the dialog between data and conceptual organization (codes and

memos). As categories are finely tuned, so memos are refined into more specific and detailed notes of explanation and organization, preparatory to the final stage of theoretical statement.

Theory Statements: The ultimate goal of the grounded process, these constitute a formal amalgam of memos that have been assessed for their ability to explain some or all of the field data. Theoretical statements, of which there may be several, provide not only the conceptual model both for collected information but also a predictive model for future enquiry. In this sense they represent a more detailed return to the initial model of research to suggest future avenues of primary investigation.

In summary, the key to the grounded process is flexibility of theoretical development. The scientific method requires that data be used to test a theoretical statement explicitly framed within a series of testable hypotheses, so that field data or its collection are structured entirely within that initial framework. This makes almost impossible the incorporation into the research design either alternate methods or theoretical concepts, in that the rigor of the scientific process is sacrificed or challenged by any attempt to introduce uncontrolled or ill-defined exogamous factors. In the grounded process, divergent methods and alternative theoretical constructs are seen as complementary, encourage a more diverse, and thus richer collection of field data to proceed, and facilitates a more rounded theoretical explication of the research interest.

Despite an initial development within sociology during the late 196Os, there has been only limited application of grounded process following initial interest. Most texts about sociological theory consider it either as an extension of hypothesis verification and thus part of conventional research procedure (Singleton et al 1988) or as a form of theoretical validation (Franfort-Nachimas and Nachimas 1992). That this latter work, a recent text on research methods in the social sciences, has only two paragraphs devoted to the grounded process indicates the lack of scholarly interest, even though no major criticisms are presented. More interesting, the applicability of grounded process is found within anthropology as a way of dealing with the diverse data generated by participant observation (Emerson 1983). As in sociology, however, the logic of grounded process has been subsumed within the means of generating theory from field data rather than as an intellectual alternative to the scientific method, as originally intended by Glaser (1978), Strauss (Glaser and Strauss 1967) and Charmaz (1983).

The grounded process offers several attractive features to cultural geography. The theoretical impulse that initiates the collection of field data continues to be applied only if it displays an ability to organize and explain information being generated. Within cultural geography, this means that concepts from various theoretical approaches can be deployed simultaneously for ordering *categories* and *memos* and thus provide a richer range of options for viewing and collecting data about cultural landscapes. As *categories* and *memos* are continuously validated by subsequent information, concepts must be robust in their capacity to understand or explain, instead of becoming scholarly centerpieces anchored to ideology. The process of grounded theory similarly has great ability to integrate cross-disciplinary approaches, since it begins with directions of research focus rather than with an explicit theoretical justification. In this way, the strengths and weaknesses of different disciplines, their diverse intellectual interests and various modes of explanation can be brought directly to bear on the research at hand. It is this approach that underpins the present study of changes in the patterning of cultural landscapes in the two neighboring *ahupua`a* of Kanaio and A`uahi, southeast Maui.

The Research Dialog in Kanaio-A`uahi

From the outset, several assumptions were made to act both as guidelines for primary investigation and a set of definable criteria, by which to assess the success or failure of implementing grounded process with concepts from varied theoretical approaches. Therefore four assumptions:

The complexity of the cultural landscape, especially when viewed as a dynamic system over time, defeats the ability one theoretical approach in cultural geography to provide a complete and integrated analysis;

The complexity of the cultural landscape is further exacerbated by problems of scale, of both the physical landscape and the social groups whose cultural patterns are under examination, and also of time, since human occupance stretches into centuries rather than generations;

A logical approach, given the above assumptions, would be to utilize concepts from a number of theoretical approaches; and

Kanaio-A`uahi has a set of attributes that make it uniquely qualified rich field site to examine the third assumption. First, it is separated in both physical landforms from the rest of central and east Maui, history and contains today a complex, partially isolated residential community composed of descendents of the earliest inhabitants of Hawai'i plus some recent immigrants; and while the historical record is poor, a wealth of oral information exists in both archival repositories and in the heads of contemporary residents.

Within each theoretical approach reside a number of assumptions, concepts, or modes of explanation that define what makes it unique. While both applications of and modifications to a particular approach may vary considerably, always there will remain a core of identifying concepts. From an existentialist perspective these also could be seen as the particular viewpoints or biases inherent to that approach. To test the above assumptions of this study, it was necessary both to select various concepts from different theoretical approaches in cultural geography and be able to reinsert them into the growing body of data during the research sequence. Thus concepts introduced early in the study design are evaluated repeatedly against field data, as new concepts and data rearrange the codes and memos generated by this ongoing process. Such concepts also become the various wise men by which the elephant of the cultural landscape will be comprehended.

A major weakness in the structure of grounded process lies in the lack of theoretical direction at the first phase of enquiry. It is unrealistic to expect that initial field data will induce preliminary definition of categories, codes, and memos. All primary enquiry will have some intellectual impulse, if only at the level of selecting a study area and techniques for data collection. Given this limitation, coupled with the desire for the most efficient use of limited field time, it was decided that the initial phase of research would proceed within the theoretical structures of the *genres de vie* approach. An obvious choice for an area as diverse and as historically complex as Kanaio-A`uahi, the preliminary requirements for this first phase concerned a basic examination of the physical landscape and its constraints on human occupance. During this phase the focus was on changed in historical experience and in cultural images of land.

Initial Research Phases

Initial research began with archaeological mapping conducted in 1990 at Keone`o`io, near Makena (map 1.1). At this stage, a cursory examination of the density and form of visible archaeological features, combined with short discussions with residents, suggested the appropriateness of a *genres de vie* approach (table 2.1 item I). Two facts quickly became clear. The first was the great historical depth available in the study area, due to the excellent preservation of archaeological features, the second that residents viewed Kanaio as composed of a number of different and competing groups. This combination of historical depth and cultural complexity reinforced the original impetus to choose the *genres de vie* approach as a way of organizing preliminary field and archival activity.

At least on Maui, the first phase of fieldwork was intertwined with that of the second of archival research (table 2.1 item II). Preliminary archival enquiries at various offices in Honolulu, the State Historic Sites Division and State Archives, provided needed information about past and present land ownership, descriptions of land use at the time of the Mahele (1846-49), and what limited archaeological work had been conducted more recently. The next step was to return to Maui, conducting further archival research in the County offices and the archives of the Maui Historical Society as well as some initial fieldwork in the two *ahupua`a* of Kanaio and A`uahi (table 2.1 item III).

The archival sources on Maui, especially the rich collection at Maui Historical Society, greatly expanded the range of available data. This was especially so for archaeological sites and legendary sites material, and personal reminiscences about the area by early settlers like Inez Ashdown. A key resource was the comprehensive file of archaeological and legendary sites for the island of Maui collected by Elspeth Sterling, which she had been working into a book to be titled Sites of Maui (1966-71), of the same format as her Sites of O`ahu (1978) before her untimely demise halted the project at the initial stage. Informal contacts provided further suggestions of knowledgeable persons to contact for interviews and some initial insights into the complex settlement patterns present in the contemporary community of Kanaio.

At this point, the available data were sufficient to introduce an initial series of concepts needed to order an evolving collection of codes and memos. These codes provided guidelines for the third phase of field investigations (table 2.1 item III), which were aimed largely at clarifying various physical features of the landscape, defining vegetation zones, and observing general patterns of human use. The *genres de vie* approach and the first concept (human-environment relationships) were key to clarifying code within and from this initial data (table 2.1 items I-III).

Upon return to O`ahu further archival research was needed to clarify many initial puzzles, notably current patterns of vegetation and areas of past use in Kanaio-A`uahi, all of which had been highlighted through trying to validate codes and memos generated in the field. At the Bernice P. Bishop Museum, attention focused on the unpublished material by Peter Chapman and especially his interviews with Sam Po. Another key source, as already noted in chapter one, was Jane Resnick's (1977) examination of the dry forest system in Honua`ula. These and other materials, especially the geomantic texts of Waialeale (1834) and Haleole (1863, 1862), greatly increased the quantity and quality of pertinent historical data and, in turn, suggested the application of concept two (cognitive mapping), concept three (conceptual landscapes), and concept four (landscape as signifier)(table 2.1).

The second concept, cognitive mapping, was suggested specifically by the Sam Po material (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1967a, 1967b, 1966, Pukui and Williamson 1966), which discusses at length named places and affiliation, supported by the detailed reporting in Sterling (1966-71) and Ashdown (1977a, 1977b, 1970)(table 2.1, items II, Ill). A number of codes were generated from this new information, many of which were to require further verification, notably during interviews with residents. Conceptual landscapes, the third concept, was triggered by the same source material. Concept four, landscape as signifier, was brought into the analysis from reading not only the Sterling manuscripts (1966-71) but also the older Waialeale (1834) and Haleole (1863, 1862) accounts of geomantic rules in traditional Hawai'i (table 2.1 items II, III).

At this stage of research, the goal was to define probable lines of enquiry and test the efficacy of grounded process. It involves a steep learning curve on the part of the investigator, given the persistent need to reexamine evidence previously analyzed. The almost daily processing of new data into codes and memos must become a standard procedure. So different is this from the conventional and more linear sequence of research when following the scientific method that it takes time to organize an appropriate and effective field schedule. In addition, the ongoing possibility of introducing concepts requires constant reevaluation of all existing codes and memos to determine if data can be organized into new patterns. As a result, research enquiries follow a cyclic rather than a linear process of data collection, then the analysis and introduction of new codes and memos, followed by yet

further collection of field data--an interactive process that continues throughout the lifetime of a particular project.

TABLE 2.1

FIELDWORK SCHEDULE

I. Initial Research Development (1990)

A. Theoretical development and conceptual selection. *Grounded Process, Genres de Vie.*

B. Keoneo`o`io Summer Field School mapping project (6/90-7/90).

1. Relationships with *mauka* components and Pi`ilani Trail.

C. Initial Kanaio-A`uahi field investigations (9/90). *Genres de Vie.*

II. Initial Archival Research (1990-91)

A. Mahele records. *Concept I: Human-Environment Relationships.*

B. Prior research (Farrell, Handy, Huetz de Lemps). *Genres de Vie; Concept I: Human-Environment Relationships.*

C. State Historic Sites records. *Concept I: Human-Environment Relationships.*

D. Kanaio-specific research (Chapman, Resnick). *Genres de Vie; Concept I: Human-Environment Relationships.*

E. Maui County records. *Concept I: Human-Environment Relationships.*

III. Initial Field Investigations (1991)

A. Field Reconnaissance (7/91-8/91)

1. Examination of physical landscape patterns. *Concept I: Human-Environment Relationships.*

2. Develop parameters for archaeological survey. *Genres de Vie,. Human-Environment Relationships.*

3. Initial observations of contemporary settlement/use patterns. *Genres de Vie; Human-Environment Relationships.*

4. Begin experiential diaries. *Concept V: Experiential Landscapes.*

B. Maui Archival Research (7/91)

1. Maui Historical Society (Sterling, Ashdown). *Genres de Vie; Concept I: Human-Environment Relationships.*

2. County Records. *Human-Environment Relationships.*

IV. Intensive Field Investigations: Phase 1 [1991-92]

A. Archaeological Site Inventory [12/91-1/92]

1. Identity and inventory archaeological sites. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

2. Initial observations on historical/contemporary use (hunting, fishing, New Age sites). *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

3. Relationship of archaeological sites to botanical zones. *Concept I: Human-Environment Relationships.*

B. Initial Field Interviews [1/92]

1. Knowledge of past landscapes. *Concept II: Cognitive Maps; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

2. Perception and value of contemporary places. *Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

C. ʻUlupalakua Ranch Records [12/91]

1. Archival material. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes.*

2. Interviews. *Concept II: Cognitive Maps; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

V. Intensive Field Investigations: Phase 2 [1992]

A. Archaeological Site Inventory [6/92]

1. Resolve mapping/archival anomalies. *Concept IV: Landscape as Signifier.*

B. Contemporary Community [6/92-8/92]

1. Interviews: beliefs/attitudes of Kanaio-A`uahi. *Concept II: Cognitive Maps; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier; Concept VI: Time-Space Allocation.*

2. Relationship of archaeological sites to contemporary use. *Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

3. Mapping of residential and use patterns. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier; Concept VI: Time-Space Allocation.*

4. Examination of surrounding regions

a. Tourism: Makena-Wailea. *Concept I: Human-Environment Relationships: Concept III: Conceptual landscapes; Concept IV: Landscape as Signifier.*

b. New Age: Pa`ia-Makawao. *Concept III: Conceptual landscapes; Concept IV: landscape as Signifier.*

VI. Archival Research [1993-94)

A. Bureaucratic Views of Kanaio-A`uahi [1993-94]

1. DBEDT archives: Geothermal projects. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes; Concept IV: Landscape as Signifier.*

2. DLNR Forestry archives: Kanaio Natural Area Reserve. *Concept I: Human-Environment Relationships; Concept III: Conceptual Landscapes.*

First Concept: Human-Environment Relationships

This concept assumes that the cultural landscape will reflect the dynamic relationships between the physical environment and behavioral aspects (the beliefs, values, and attitudes), of human populations. Among communities residing in or exploiting Kanaio-A`uahi, various cultural demands come into conflict both today and in the past. Through various patterns of social behavior, both individuals and groups either will modify these physical parameters or adjust to them. In extreme cases where habitation or use of particular landscapes can be life-threatening, as on the upper slopes of active volcanoes, the group may downplay or ignore such an environmental hazard if it conflicts too severely with the prevailing definition of what constitutes the cultural landscape. As cultural landscapes evolve and are modified by group behavior, so patterns of residential activity within Kanaio-A`uahi can be compared with that for other areas in Hawai'i, where similar physical characteristics are or were perceived as being within similar cultural landscapes. This allows for comparative discussion and analysis of differing areas and regions throughout Hawai'i (figure 2.2).

The human-environment tradition has been the dominant intellectual force for anglophone geography in the Pacific, in part regional geographies of the Pacific were derived from this tradition, in part because the concept of 'islands as controlled laboratories' made a oceanic realm attractive for scientific enquiry. The diversity and dominance of the approach can be range of interests of some of the major practitioners: Tim Bayliss-Smith (1988), whose interests focus mainly of cultural ecology, rural agricultural systems and development in the central Pacific; Richard Bedford (1987, 1980, 1977) with main efforts in economic and social development issues in Melanesia; Harold Brookfield (1984, 1975, 1964) who in some ways is so eclectic as to define any central focus, but who has studied social impacts of rural development in Melanesia, but also extends out of the human-environment tradition to examine theory and method in human geography; R. Chandra (1983) with major research in rural development in Fiji; W.E. Clarke's (1994, 1990, 1987) research in a number of areas, but most emphasis on human ecology, rural and regional development issues in Melanesia.

A common spatial pattern is the emphasis on research in Melanesia and central Polynesia, a pattern followed by one of the more eclectic members, John Connell (1991, 1988, 1987) who has moved between ethnic identity and political structure, regional development and economic systems, and human ecology, again mainly within Melanesia; P.H. Curson (1979) who has focused on economic development and human ecology in central Polynesia; Larry Grossman (1984, 1977) with research into human ecology and rural development in Melanesia; Harley Manner (1984, 1977), who is one of the few to conduct intensive research in Micronesia, though he has also examined human ecology issues in Melanesia; Randy Thaman (1994, Thaman and Clarke 1983) who also focuses mainly on rural regional development and human ecology issues as does Nigel Wace (1980), both in the central Pacific, while Peter Pirie (1972a) and R. Gerard Ward (1986, 1980) tend to have emphasized human ecological issues within the context of population geography in the central Pacific. While the geographical area under examination is restricted and common themes of interest persist throughout, the dominance of development-based issues underlies the majority of the research. This is likely responsible for the fact that the human-environment approach has become diffuse in terms of shared concepts since the late 1970s. Yet all who work within this genre share the concept of cultural landscape as reflecting the close interaction between social

behaviors and environmental attributes in a form susceptible to rational analysis and scientifically-structured enquiry.

This particular school includes Bryan Farrell, the only geographer operating within the anglophone tradition to conduct contemporary research on Hawai'i. His particular interest has been tourism and development, with a theoretical concern for the structural components imbedded with the human-environment domain. An emphasis on changes over long swings of time and their social impacts are typical of this orientation, as can be seen in both his book, Hawaii, the Land that Sells (1982), and previous studies of Pacific tourism (Farrell 1979, 1977).

CONCEPTUAL SUMMARY

FIGURE 2.2

Approach	Positive Aspects	Criticisms
Genres de Vie	Avoids positivist/non-positivist dilemma Holistic orientation Regional orientation Strong regionality	Often becomes very localized/parochial Can often be emic in analysis makes comparison/ contrast difficult Lack of general synthetic statements
Human-Environment Relationship	Adds historical dimension and dynamic Structured positivist approach "Scientific" Generates information that can be compared with other places/ people-other cultural landscapes Basic premises of holistic dynamic though often not reflected in studies	Traditionally not explicitly theoretical With science orientation comes inclination to use positivist/biological science logic Tendency to focus on detail and shift to the static at the cost of the dynamics of the cultural landscape
Cognitive Maps	Attempt to acquire quantitative measures of cognitive patterns of individuals Inherently spatial	Inappropriate methodology Shift from individual to group not justified
Conceptual Landscapes	Useful analysis of built environment General concepts allow synthetic, Comparative statements of different cultural landscapes Close links to archaeological and historical approaches	De-emphasis on physical landscapes No complex man-land dialectic Change as vignettes—no emphasis on process Logic of analysis not always clear
Landscape as Signifier	If valid can be applied to past cultural landscapes Allows integration of visible and conceptual patterns of landscapes Deals with physical evidence	Landscape is explicit communication form not proven Methodologies borrowed from other disciplines Effective only with built environment
Experiential Landscapes	Good at illuminating non-rational aspects of cultural landscapes Provides a good theoretical and Methodological balance to overly Positivist-etic-functional concepts Dependence on modernist participant Observation	Individually focused Lack of theoretical logic between individual and group Very emic Not possible to compare cultural landscapes Has become key to post dialog
Time-Space Allocation	Integrates space and time Very effective quantitative methodologies	Presumption that individual actions reflect group values

Provides a strong conceptual logic encompassing both latent and explicit aspects of cultural landscapes	Can be overly functional/positivistic Lack of research in non-western settings

As with the biological sciences, from which many of the basic assumptions that structure the human-environment approach were taken, in the last thirty years major paradigm shifts from simplistic modeling to analyses of complex systems have radically modified the approach (figure 2.2). In an attempt to deal in more detail with multivariate structures a number of practitioners have turned to concepts borrowed from rational economics (Norron 1989) or behavioral psychology (Aitken 1991, Ericksen 1980, Golledge and Stimson 1987, Norron 1987).

For several reasons, the concept of human-environment relationships became part of the Kanaio-A`uahi research:

It has been the dominant intellectual approach taken in studying cultural geography in the Pacific and has been applied successfully in a number of island situations;

It derives from a theoretical tradition which espouses comparative study, exemplifying a basic premise of the scientific-rational school of investigation that data and explanation developed for a particular set of physical and cultural attributes can be compared to similar situations elsewhere; and it fits logically with the dominance of certain physical characteristics throughout Kanaio-A`uahi, especially water, and with the inherent risk presented by recent lava flows, high winds, and dangerous near-shore conditions that are such a visible part of the physical landscape.

The ability of such an integrative concept to organize diverse material, much of it about the physical environment (soil surveys, vegetation studies, geological analyses) and to link these to deriving a clearer picture of past landscapes of Kanaio-A`uahi was became crucial to the success of field enquiries. Similarly, an ability to suggest explanatory codes during the archaeological survey also was instrumental in advancing discussion about changing patterns of land use in the Kanaio-A`uahi community.

Second Concept: Cognitive Maps

The conceptual assumption of the cognitive map is that images and labels of a landscape mainly reflect the social values of the viewer, observer, or participant (figure 2.2). For Kanaio-A`uahi, it was expected that places with a shared identity, along with their opposite, locations that carried no such identity or label. Similarly, linguistic and cultural affiliations to the land. Both divergent and shared views of a landscape are reflected in cognitive maps that can be elicited from acceptance by a group involved, in this case Kanaio residents. An extension of this reasoning is that the common location's names reflects not only its empowerment but also cultural validation of having control over that location.

The formal naming of the Kanaio-A`uahi area is relatively simple. At present there are few, commonly accepted names, partly as a result of limited interaction with the rest of the island of Maui and partly because archival records indicate many names have disappeared from the contemporary landscape. On the one hand the divergent groups making up Kanaio share a number of named places as residents, but on the other many other names are shared only by members of a particular group. These locations, both those simply named, and those which have become labeled by a story or situation as naming device, have become a kind of boundary marker or summary of territorial control. Details such as these can provide a number of key codes and memos for examining shared and competing cultural landscapes throughout Kanaio-A`uahi.

As already noted, a key concept in mental mapping is that the spatial patterns generated in the minds of individuals can reflect both personal and group views of a cultural landscape (Gould 1966). A major difficulty with applying this approach, and a major factor in its near demise, has been the difficulty of an appropriate methodology to elicit such 'internalized maps'. As with natural hazards research undertaken within the compass of the human-environment school, many of the theoretical premises and methodology for mental mapping borrowed from social psychology. In turn, questions about the applicability of psychological premises to the spatial concerns of cultural geographers, along with a lack of theoretical rigor sometimes characteristic of uncritical borrowing from cognate fields, seriously challenged the validity of this approach (Goodey and Gold 1985)(figure 2.2).

In common with most of the human-environment tradition, the application of mental mapping to parts of Hawai'i has been limited. The only direct examples were part of a summer field school in human ecology conducted in the early 19705, mainly by anthropologists and geographers from the University of Hawaii at Manoa (Armstrong and Lewis 1972, Bostwick and Murton 1976).

Other isolated instances of mental mapping are found in graduate research (Morgan 1978) but, as with natural hazards research, no attempt was made either to build on and expand this field experience or develop a more comprehensive theoretical position (Bostwick and Piianaia 1972).

Third Concept: Conceptual Landscapes

Conceptual landscapes reflect an assumption that group values and attitudes will be manifest in both the built environment and aspects of material culture. The material appurtances, decisions on how to use the land, and built structures of an area as much as the communications between individuals and groups are based on a functional rationality (figure 2.2). In Kanaio-A`uahi this implies that material structures of present and past places, modified by human residence and areas by choice left pristine, reflect the values and attitudes of their occupiers. Locations of social importance, usually ritual significance, will be carefully inserted into the landscape to make a complex set of statements about control and vested ownership. By extension, as both members of groups and groups themselves change, so the construction, location, and nature of material remains will also change over time.

The concept of conceptual landscape derives from the tradition of landscape as signifier. It has been one of the most durable of humanist schools within cultural geography and includes, among others, the seminal works of both J.B. Jackson (1984,1970) and D.W. Meinig (1979, 1965) on vernacular landscapes and landscapes as social icons. Despite a range of research topics, common to all was the concern with human-modified landscapes, and it is within this conceptual literature that much of the debate has occurred on how to define and apprehend cultural landscapes with the work of Duncan and Ley (1993) on images of place and place as icon; Wilson's (1992) examination of culture and the built environment; Eyles (1990) geomantic logic and vernacular ritual place; Agnew and Duncan's (1989) edited volume examining cross-disciplinary research, specific linked to perception and ritual place, Vale and Vale's (1989) key study that links images of place and the built environment; Goss' (1988) examination of the social aspects of the built environment, Cosgrove (1984) on symbolic landscapes as an artifact of social patterns, Rapoport's (1980, 1976) work on built environments, landscape as communication, and geomancy; and, Duncan (1976) on how landscape enhances verbal communication. An example of this view of the cultural landscape can be found in Jackson (1984):

...landscape is not a natural feature of the environment but a SYNTHETIC space, a man-made system of spaces superimposed on the face of the land, functioning and evolving not according to natural laws but to serve a community for the collective character of the landscape is one thing that all generations and all points of view have agreed upon. A landscape is thus a space deliberately created to speed up or slow down the process of time...

Landscape: a composition of man-made or man-modified spaces to serve as infrastructure or background for our collective existence...

To consider landscapes as conceptual statements has been popular in historical geography represents an outgrowth of the human-environment theme initiated by Carl Sauer (1952, 1925). A common criticism, given the focus on the sequential and dynamic nature of cultural landscapes, was the lack of interest in physical processes—what Jackson refers to as natural features--as an active agent. Thus while the human population is seen as a dynamic force, within the notion of conceptual landscape there is not the underlying premise of rationality incorporated within more scientific approaches to the links between people and their environment such as is found in cultural ecology (figure 2.2). On the other hand, some limited attempts have been made to impose a more rigorous semiotic structure on the inherent flexibility of conceptual landscapes (Duncan and Ley 1993, Smith 1988).

Major efforts within geography has focused on the built environment as signifier--a key interdisciplinary area of landscape research, undertaken by geographers including Chapman's (1990, 1987) on local knowledge, perception and migration in Melanesia; work by Powell (1977) on the role of perception on large-scale migration in North America; and a discussion of ethnic identity and empowerment fur Maori in New Zealand by Stokes (1987) and Murton (1987). There are also a number of more theoretical works such as that by Chapman (1991) on perception and migration; Murton (1972) on perception and cognition; work by Goss (1988) that links discussion of the built environment to semiotic structure; other theoretical discussions on perceptions and values of place by Duncan (1985, 1976, Duncan and Ley 1993), and similar conceptual developments by King (1984, 1980).

Work in related disciplines includes that by a series of omnibus studies of residential house forms by anthropologists such as Duly (1979) and residential settlement patterns by Fraser (1968) along with major conceptual contributions by Rapoport (1980,

1977, 1976) to cultural aspects of specifically the built environment and perception of place in general. Sociologists such as Griffith (1992) have examined the ritual built environment in the American southwest; more general, conceptual work of Agnew (Agnew and Duncan 1989); a seminal work within this school is that of a group of architects examining built environment as social communication in Las Vegas (Venturi et al 1977); while social psychologists such as Altman and Werner (1985) focused on perceptions of home.

Despite varied theoretical lineage, all these studies share the basic premise that humans are the active agent and the natural environment the receptive or passive voice in the evolution of the cultural landscape. The expansive nature of this subject area also means that, not surprisingly, the idea of conceptual landscape among anglophone geographers in some respects resembles the *genre de vie* approach among the francophone. Within the Pacific, major attraction is the ability to discuss perceptual landscapes within varied cultural contexts, as has been used widely to consider cultural territories outside the euro-american situations with the work of Chapman (1990, 1987), Murton (1987, 1972), and Stokes (1987) noted above.

Architectural historians have extended the conceptual landscape approach by applying semiotic principles to the built environment as if it were a formal linguistic system. With this premise the human-modified landscape becomes a symbolic text to be decoded and read, in what Preziosi (1979a, 1979b) labels architectonic analysis. Heavily reliant on semiotic theory, in fact the underlying assumptions of this genre are anchored in research on proxemics (Hall 1966) and in environmental psychology and anthropology during the 1960s and 1970s. Although a major focus of research in the field of communications, proxemic studies have not been pursued much in either anthropology or geography, apart from those anthropologists interested in spatial aspects of culture (King 1976). A major criticism of architectonic analysis is how applicable to the cultural landscape are concepts and

Intermediate Phases of Field Research

This phase of field research in Kanaio-A`uahi, the third and fourth periods (table 2.1), contained most of the primary survey of archaeological features and contemporary landscape, supplemented by archival work at **I** Ulupalakua Ranch, limited onsite interviews, and the initiation of a field diary.

By itself, the third phase was so diversified, because a major goal was to enhance the initial data in areas where previous reconnaissance had indicated major gaps. The first need was to complete a map of past and present patterns of land use, specifically of residence compared to ranching and of which usages were versus limited and which restricted--like for the national guard firing range at Pimoe (map 4.1). Also, it was time to begin entering field impressions in a daily diary, since a substantial amount of archival material had been analyzed and Kanaio-A`uahi had been visited several times. The sixth concept, time-space allocation, was added once a preliminary map of land use had been completed, since the constant flow of residents and visitors into and out of Kanaio-A`uahi was now far more evident. Appreciating this ongoing flow reflected a significant improvement in efficiency of observations, mainly due to camping onsite rather than transiting from beyond the region.

The addition of the concept of experiential landscapes, the fifth, occurred as field enquiries became more tightly tied to the land and people and, in turn, simplified the recording of perceptual aspects. Most primary enquiries during this phase, however, focused on issues identified in the earlier two phases.

Similarly, the need for more detailed data meant that most effort was spent in elaborating and modifying codes and memos defined from considering the first four concepts (human-environment relationships, cognitive maps, conceptual landscapes and landscape as signifier; table 2.1).

The fourth field phase, in contrast, consisted largely of archaeological field surveys, designed to establish past cultural landscapes but in the end contributed a mass of data in several areas. A major expansion of the field diary, was mirrored in the elaboration of concept five, experiential landscape, which in turn reflected continual exposure to all sections of the *ahupua`a.* As the study area had to be covered on foot, data were collected on not only surface archaeological features but also vegetation profiles, geologic indicators (especially patterning of lava flow and underground tube systems), and contemporary patterns of land use. Examining the ‘Ulupalakua Ranch archives added historical depth to much of this material, especially in terms of land control and use during historic times. This constant enlargement of the matrix of field information meant continued reworking of the first concepts on human-environment relationships and the third about conceptual landscapes, especially as details obtained through archaeological mapping began to integrate with those in the Sterling manuscripts (Sterling 1966-71) and with the interviews

Chapman and others did with Sam Po (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966). Attempts also were made, through the concept of landscape as signifier, to integrate newly acquired field data with archival material on geomancy, but with less success.

Several interviews conducted during field surveys not only provided pertinent data to the concept of landscape as signifier but also stimulated further interest in contemporary geomantic patterns among the New Age community of Upper Kanaio (chapter 4), an important topic for ongoing assessment of codes and memos. The major impetus from interviews was to examine again and reorganize data in terms of concepts two and three, cognitive maps and conceptual landscapes. It became clearer, during this period of field activity, that what initially had been noted as rational decisions of land use, especially for ranching, in fact were far more influenced by social patterns and deeply held values among early settlers. Intellectually, during this phase, a shift in emphasis similarly became clear, as interview and other detailed information suggested more humanistic concepts, compared to more rational ones that dominated early enquiries when most data was observational. This intellectual shift was stimulated by the sequence of grounded process, as information obtained from interviews and detailed field observation could only be organized in codes and memos that, in turn, derived from several concepts of landscape (conceptual landscapes, landscape as signifier, experiential landscapes).

Fifth Concept: Experiential Landscapes

This concept reflects the assumption that all perception, and thus the collection of all field data, is filtered by the individual through an emotional-perceptual framework (figure 2.2). As a result, personal biases when actually acquiring primary information, on the part of both collector and giver, largely defines the strengths and weaknesses of field data and field research. Direct acknowledgement of this social dialectic and the appropriate methodologies can lead to an introspective analysis of an individual's relationship with particular cultural landscapes.

FIGURE 2.3

GROUNDED THEORY DEVELOPMENT FROM FIELD DIARIES

Italics indicates concept that organizes the Code

* indicates Memo development

Category indicates Categlory development

Specialized knowledge held by residents

1 (6/10/90) Specialized knowledge held by residents

2 (6/10/90) Military destroying sites at Pimoe—Government impact/disinterest

3 (6/10/90) Water shortage/hidden water sources. *Human-Environment Relats.*

3a (9/21/90) Water/soil/planting patterns. *Human-Environment Relats.*

4 (9/21/90) Mist-rain/vegetation relationship. *Human-Environment Relats.*

5 (9/21/90) Kukui in Lanikaula grove—imported/planted trees, not just visible human constructs but also vegetation patterns. *Conceptual Landscapes, Landscapes as Signifier*

6 (9/21/90) Visible vegetation/landform variations between Kanaio-A`uahi—not visible aspects but emotional. *Experiential Landscape*

7 (9/26/90) Kanaio-Kalo`i boundary and landform variations. *Landscape as Signifier*

8 (9/26/90) Presence/importance/dominance of *wiliwili* in lower sections. *Human-Environment Relationships*

9 (9/26/90) Quality and livability (or lack of) in East Homesteads area.

10 (7/4/91) Concept of Kahikinui.

11 (7/9/91) Concept of emptiness/space. *Experiential Landscape*

6a (7/10/91) Kanaio-A`uahi variations.

4a (7/13/91) Mist/rain/vegetation patterns. *Human-Environment Relationships*

8a (7/15/91) Relationship of *wiliwili* groves and built sites. *Human-Environment Relationships*

6b (7/15/91) Presence of *pukiawe* (Kanaio) and absence (A`uahi), vegetation patterns/trees.

12 (7/15/91) Emotional links to A`uahi. *Experiential Landscape*

13 (7/15/91) Dry forest patterns/locations/composition.

14 (7/19/91) Vegetation and built environment relationships. *Human-Environment Relationships, Conceptual Landscapes, Landscape as Signifier*

15 (7/29/91) Vegetation change and site change with elevation—the empty zone. *Human-Environment Relationships*

11a (7/21/91) Empty/visibility range

16 (7/21/91) Stark nature of coastal habitations. *Human-Environment Relationships*

*8b (7/22/91) *Wiliwili* and built sites.

17 (7/24/91) *Category* Development of historic land use reflected on landscape. *Human-Environment Relationships, Conceptual Landscapes*

*4b (7/24/91) Mist/vegetation and agricultural use

18 (7/24/91)

The experiential approach to a landscape is part of the existentialist tradition as seen in the work of Curry (1991) on a postmodem discussion of bias; Relph's (1985) exploration of perception and phenomenology; work by Schatzki (991) on spatial perception, and a major figure in Tuan (1990) in perception, image and culture. A branch of this approach advocated the combining of these premises with those of the *Genre de vie* school, developing a theme of biographical landscapes (Buttimer 1982, 1976). Experiential landscapes, as especially aniculated by Tuan (1990), are similarly phenomenological in their impulse and based in nonwestem views of the limits between people and their natural environment, aniculated primarily within the Chinese intellectual tradition.

Common to these approaches is an intellectual focus on the individual and on "everyday life", explored usually from the reference point of a key informant or the investigator. In general, neither an explicitly scientific structure nor analysis based in comparative logic are considered a requirement of scholarly enquiry, which is consistent with an existentialist and phenomenological critique of traditional approaches taken by anglophone geographers. Not surprisingly, most criticisms of the concept of experiential landscape emphasizes the excess of introspection and that various such landscapes cannot be assessed comparatively (figure 2.2). What results is an illuminating analysis of an individual and introspective relationship with a panicular physical landscape that, unfonunately, is neither useful for understanding the cultural landscape in general nor provides definitive infurmation contrast with other cultural landscapes. Although the methodologies of observer as infurmant or emic panicipant are useful, their theoretical premise of subjective individualism limitS the applicability of experiential landscapes to cultural geography (Curry 1991, Ley 1978, Nonon 1989a).

The existentialist tradition is not a major feature of cultural geography in the Pacific, but some of the work by francophone geographers (Bonnemaison 1981) comes quite close to reflecting the goals of adherents of the experiential landscape approach.

Nevertheless, apprehending the introspective landscapes of such Kanaio-A I uahi residents and proceeding self-consciously through primary enquiries can aid gready to the research process, as well as provide a working model of how grounded process operates in the field (figure 2.3).

Sixth concept: Time-Space Allocation

The assumption that social demands and individual goals are reflected in the use of decision about time and space is the basis of this concept (figure 2.2). Time-space allocation appears especially applicable to residents of Kanaio-A I uahi, given the relative isolation of their community from most consumption items. A good, if narrow, paved road connects them to locations in Kula or downslope in Wailuku-Kahului (map 1.1), from which almost all goods and services must be obtained. Residents often appear to be constandyin transit for one purpose or another, so that decisions about when, where, and for what purposes travel is initiated into and out of Kanaio-A I uahi would suggest that time-space allocation be an appropriate concept to try and apply.

Time-space allocation is a concept central to the approach of time geography, advocated originally by Torsten Hagerstrand(1982, 1978a, 1978b). In its original form, this was a complex and synthetic artempt to combine quantifiable data with behavioral patterns, based largely on information about the individual. According to Hiigerstrand (1982:331):

It is an axiom of time geography that the movements of an individual are restricted by the location in time and space of fixed points which must be respected. The time-spaces left free are defined by more or less symmetrical double cones, called prisms. This means the timetables of dominating institutions (family included) to a large extent determine indirecdy where individuals, even when 'free', can act or be exposed to experience. (Hagerstrand 1982:331)

Despite early promise, time geography became criticized for the narrow focus of time-space allocation on rational, quantitative, and rigorously scientific enquiries (Thrift 1991, Kellerman 1989, Pred 1984, 1981, Carlstein 1982, Parkes and Thrift 1980)(figure 2.2). This was unfortunate, for the original goal was an approach where quantitative, historical, and subjective materials could be woven into an individually-based description of how time and space link together within the cultural landscape (Hagerstrand 1978a, 1978b).

Conversely, some of the scholarly focus of time geography has been incorporated within research on, for instance, the movement of people, where time-distance relationships have long been seen as crucial (Chapman 1987). In general, such studies do not implement the full conceptual scenario of a time geographic approach, specifically the centrality of people's expenditure of time. Yet, ironically, being in some ways less rigid in their theoretical and methodological interpretation of Hagerstrand's original argument, they are also closer to its comprehensiveness and its applicability to the cultural landscape.

Final Phases of Field Research

During the fifth and sixth phases of this project, analyzing the cultural landscapes of Kanaio-A`uahi expanded at a dramatic rate, as field activity focused far more on clarifying codes and memos defined previously (table 2.1). Thus was emphasized a particular characteristic of the grounded process: that, initially, research enquiry is both disorganized and inefficient when compared to that following the scientific method, but later becomes highly focused, effective, and tightly tied to extant materials rather than being dependent on theoretical justification for its rationale. In 1992, the focus in finalizing the mapping of archaeological sites was to resolve questions about location, functions, and use, especially in respect to Hawaiian rituals, as well as to construct a detailed map of the Kanaio community (table 2.1). The need for this duplication of effort had been noted during definition of memos with the first concept on human-environment relationships. Although it had been predicted initially that sites would reflect particular features of the physical environment, the locations of both the archaeological data and early maps suggested that the situation was more complex. While some sites, especially agricultural ones, were explained by the obvious needs of soil and water, other and equally suitable areas remained unexploited in contrast to other and more marginal sites. Perhaps more critically, there appeared no functional explanation in either Kanaio or A`uahi for the location and density of both ritual features *(heiau)* or contemporary ritual sites, such as the Buddhist Temple (maps 3.1, 3.2, 3.3,4.1).

The identification of alternative memos suggested that the notions of conceptual landscapes or of landscape as signifier might be more promising and further surveys were undertaken to evaluate far more rigorously assumptions imbedded within prior memos.

From this it became apparent that many decisions about the placement of archaeological sites, especially *heiau,* reflected ritual and symbolic concepts of land as well as the validation of power and local control (fourth concept). Even choices of placement and orientation made for agricultural and housing sites could only be understood in terms of the idea of conceptual landscape (third concept). This interplay between such different concepts and the constant reevaluation of their constituent codes and memos provided a valuable set of checks and balances to what otherwise might have become an overly simplistic validation of prior results.

A major focus of this final phase of fieldwork was interacting with contemporary residents in Kanaio (table 2.1). A review of codes and memos revealed that insufficient material on the present community, especially their concepts and values of Kanaio-A`uahi as a place. There was a similar need to clarify perceptions and attitudes elicited during earlier phases, which had suggested certain codes for which field data were inadequate.

At this time, the dominant concepts in code-memo definition and refinement were of experiential and conceptual landscapes (third and fifth). Ongoing elaboration also occurred with some earlier concepts, like the second of cognitive maps, but more recent data merely validated the existing codes and memos rather than suggesting newer lines of enquiry.

Evaluation of personal field diaries during this phase brought a key methodological issue during this phase that was unexpected and would not have been identified except for grounded process (table 2.3). This was that my views and attitudes about land changed in dramatic and direct relationship to the number of in-depth interviews conducted at the same time. How self-impressions of Kanaio-A`uahi land use and control could be so influenced by the amount of social interaction through local interviews contrasted to earlier phases, like archaeological surveying or mapping of sites, where little such interaction occurred. The major impact of social interaction on the sequence of field enquiries and subsequent data analysis was striking, with particular implications for bias and self-perception of a researcher in any field setting.

The final phase of primary enquiries involved a survey of surrounding areas, especially Makena-Wailea, Pa`ia-Makawao and Kula (map 1.1, table 2.1). The need for specific images and impressions of them had become critical for clarifying codes and memos derived from conceptual landscapes and landscape as signifier (concepts three and four), since much of the interview material described situations or images about Kanaio-A`uahi by contrast to such other locations. Makena-Wailea, one of the major resort centers in Hawai'i, was the focus of Farrell's (1982) research on the tourism industry, and most residents expressed concern about uncontrolled development and impending collapse of traditional lifestyles.

The images, construction, landscaping, even the use of Hawaiian words in naming of Makena-Wailea were viewed as primary examples of a powerful, yet competing cultural landscape that might soon engulf Kanaio-A`uahi. Increasing tourist traffic from Makena-Wailea, which was traveling east along the improved road to Hana (map 1.1) only served to reinforce this local sensitivity.

The Kula section of Maui, from Keokea to Pukalani on the main highway (map 1.1), was another cultural landscape frequently mentioned by residents, within expressions of broader concern. This is a section of Maui characterized by recent dramatic growth of expensive residences on small, so-called agricultural lots, again with major social and economic implications for more traditional communities farther to the east, and with little visible impression that planning controls exist (chapter 4). Already, such a pattern of expansion is beginning to be felt in Kanaio, with sharp rises in land prices during recent years and rumors of various housing projects beginning to circulate. As with Makena- Wailea, interest in the Kula area lay mainly with visible images formed from house construction and landscaping.

The need for clarification, since it involved the community of Upper Kanaio of a third peripheral area was more subtle, identified various philosophical aspects of New Age religions as having become major forces in the recent and future use of Kanaio land. Interviews during earlier phases also had become clear how perceptions of Kanaio between believers in residence and at other centers of New Age interest (centered on Makawao-Pa`ia-Haiku) was both subtle and complex. In order to clarify these relationships and future plans for Upper Kanaio, it was necessary to make enquiries at New Age sites in both sets of communities as well as to establish the ritual interest in Kanaio by Makawao-Pa`ia residents--otten observed traveling to Kanaio for ritual activities. Since the symbology and liturgy of New Age ritual is borrowed from several sources (appendix III), it was important to learn how groups of believers on Maui incorporated conceptions of Kanaio within their religious system. In the end, field information made crucial contribution to clarifying a several codes and memos, especially those concerned with the second and third concepts, cognitive maps and conceptual landscapes.

As a result mainly of events that occurred toward the end of fieldwork, the final phase involved returning to archival sources in the Forestry branch of the Department of Land and Natural Resources (DLNR) and of the Department of Business, Economic Development and Tourism (DBEDT) geothermal office (table 2.1). Further information was needed on why the State of Hawaii

had initiated eviction proceedings against a homestead family on Kanaio land and what lay behind the formal designation of the Kanaio Natural Area Reserve. In doing so, another series of codes and memos emerged about the image of the "Empty Quarter" and how that defines the State administration's view of Kanaio-A`uahi (chapter 4). First tied to the notions of conceptual landscape and landscape as signifier (concepts three and four), these codes and memos subsequently became refined by administrative actions about a geothermal power-line--in fact, one of the initial reasons for selecting Kanaio-A`uahi as an area for study--emanating from another State agency (DBEDT). Research on archaeological sites and social impacts of this powerline, undertaken on contract by the federal Department of Energy, not only added a corpus of new information about how various parts held contested images of the areas cultural landscapes of the Kanaio-A`uahi community, but also defined further the broader image of the empty quarter.

These final phases of field and archival research reinforced the ability of grounded process to both accommodate unexpected situations and facilitate acquisition of appropriate data. They also demonstrated the flexibility of the method of codes and memos and the initial choice of concepts to incorporate difference circumstances and predict with some accuracy the unfolding of unanticipated events like the intervention of State and voluntary agencies. The ease with which, in this research, grounded process incorporated various modes of evaluation and refinement is the focus of the following two chapters. In these, the sequence of codes and memos chosen during fieldwork become incorporated into a series of discussions about the cultural landscapes, past, present, and future, of the *ahupua`a* of Kanaio and A`uahi.

CHAPTER 3
PAST CULTURAL LANDSCAPES OF KANAIO-A`UAHI

The major component of visible past cultural landscapes is the physical evidence of past activity. A key component of this study was an archaeological survey to locate and describe all visible archaeological sites within the *ahupua`a* of Kanaio and A`uahi. However this does not provide a very clear picture of past use, for as Kirch (1985) has noted, not only has Maui been less intensively studied by archaeologists than either O`ahu or Hawai'i but there has also been a lack of any published synthesis of the archaeological or historical record for any section of the island. In addition most of the research done has been motivated by legal constraints related to the environmental impacts of developments rather than by comprehensive research designs, leaving the work descriptive in nature. The only attempt at a regional synthesis was the Kahikinui research conducted in 1966 under the direction of Peter Chapman, which unfortunately remained uncompleted after his death.

Large-scale development has generated over forty archaeological studies in just the Kihei-Makena coastal area of central-east Maui, but they are small in scale, descriptive, and make no significant attempt to discuss the larger leeward-zone context of past land use (Clark and Dixon 1993, 1992, Donham 1992, 1990a, 1990b, Jensen 1992, Clark et al1990, Gosser and Cleghorn 1990, Roe and Cleghorn 1990, Kennedy and Bigelow 1989, Dobyns 1988, Jourdane 1988, Kennedy 1988, Shapiro and Haun 1988, Dicks and Haun 1987a, 1987b, Haun 1987, 1978, Rosendahl 1984a, 1984b, 1981a, 1981b, Bath 1983, Shun and Streck 1982, Bordner and Cox 1981, Environment Impact Study Corporation 1981, Sinoto 1981, 1978a, 1978b, Bordner 1980, Schilt and Dobyns 1980, Dye 1979, Rogers-Jourdane 1979a, 1979b, Schilt 1979, Sinoto and Rogers-Jourdane 1979, Cordy 1978, Davis and Bordner 1977a, 1977b, Hommon 1976, Cleghorn 1975, 1974, Barrera 1974, Clark 1974, Walton 1972, Kirch 1971, 1970, 1969). Most of these projects were limited to surface surveys, though in a few cases limited test excavations were conducted (Kirch 1985, 1971).

The utility of this body of research is further limited by the lack of continuity in most of the study areas--rarely was the same group of researchers employed for different phases of the same project which resulted in little or no continuity of research interests or techniques even within the same specific study area. Despite over forty studies and an impressive sum of money the only useful summary has been developed by Kirch (1985) for this portion of east Maui.

The most accepted view of early Hawaiian settlement was that of a population structured around wet-field (i.e., *lo`i*) subsistence. Early population concentrations are predicted for areas most suitable to *lo`i* systems, with population based mainly on the windward sections of the major islands, such as the Ke`anae to Hana section of east Maui (map 1.1). An extension of this argument is that the leeward or dry portions of the islands were exploited on a seasonal or situational basis but otherwise did not see any significant land use or residence until the 14th century (Kirch 1985).

Expansion into the leeward zones in this period is posited to reflect sociopolitical changes in Hawaiian society resulting in the collapse of kin-land relationships and the definition of *ahupua`a* boundaries (Dye 1989, Hommon 1976). Radiocarbon dates for the Makena area indicate that major occupation and land modification began in the mid-16th century, which also holds true for the Kahikinui dates (Kirch 1985). Demands of the new political hegemony for food surpluses, combined with an ever-increasing population, forced the Hawaiian population to expand into more marginally productive agricultural zones such as Kanaio-A`uahi.

This model is both overly simplistic and biased heavily towards the highly visible *lo`i* agricultural systems. As Handy and Handy (1972) note, there was a very large repertoire of dryland crops available to the Hawaiian farmer prior to the introduction of the *`uala.* Dryland *kalo* and a number of different varieties of yam were apparently cultivated in various regions, but as they do not leave as visible of indicators the retaining walls, leveled areas, and irrigation systems common to *lo`i* systems the result has been a tendency to downplay their significance. In addition as this area of traditional agriculture quickly disappeared after European contact there is little remaining information on either crop yields or even percentage of land devoted to dryland production. This, combined with the dominance first of the sweet potato and the higher social prestige of the *lo`i kalo,* focused consumption and interest during the historic period on *kalo,* leaving a very muddy trail to follow in clarifying agricultural land use decisions in precontact Hawai'i.

Kirch has noted (1985) that extensive clearing and a recession of the dry forest occurred in Lapakahi and the Kona Field System (both on the island of Hawai'i) during the development of complex dry field systems. However his analysis did not include the research done by Resnick (1977) and others on the condition or climatic impacts of dry forest regimes. The mist drop noted by Resnick (1977) would have provided sufficient moisture above 1500 foot elevation in Kanaio and A`uahi. Below this elevation, with mist no longer a factor, rainfall, spring water, and limited soil would have been limiting factors. As discussed in the Introduction the key factor appears to be the height of plants, which collect and catch the moisture, providing sufficient moisture for Hawaiian

dryland crops.

Above the 1500 foot elevation it is likely that effective food production was directly linked to preservation of the dryland forest tree cover. In the *makai* sections (below 1500 feet), food production would have been limited by water demands to seasonal exploitation of various *kipuka* with temporary water flow. In Kanaio-A`uahi the use of traditional dryland crops seems to have continued into the historic period alongside the newer introductions, as the Land Commission Award testimony for upper Kanaio contains several references to *ka/o* production (appendix IV).

The Development of Religious Centers

The traditional accounts describing the development of religious centers or *heiau* location are limited in number, but generally reflect the statements made by Kamakau (1964), who notes that *heiau* went through evolutionary stages, from *mu`a Lono* or agricultural *heiau* to more significant *heiau,* finally moving to */uakini* or sacrificial *heiau* status (Kolb 1992, 1991). Most *heiau* did not complete the cycle, and given various political and religious factors, many *heiau* were demoted or completely abandoned.

Applied to the situation in Kanaio, it suggests that the large number of *heiau* noted in the oral tradition may reflect the genealogical tradition of Lower Kanaio families who state that founding ancestors were part of the Kamehameha I ordered migration of Kohala *kahuna* to the area combined with the recent (1790?) lava flow in the immediate vicinity. Given that religious sites went through periodic change, the concentration of *heiau* in Kanaio may be reflective of this Kamehameha I induced migration to the area, in part possibly prompted not only by the dictates of Kamehameha but also the then-recent manifestations of volcanic activity on an island otherwise dormant. This may in part explain why A`uahi does not exhibit the same density of *heiau,* even with similar physical features, despite recent activity along the western boundary (but originating in Kanaio) and smaller sympathetic flows from Hokukamo. The religious sites in A`uahi and elsewhere outside of Kanaio likely reflect the older Maui-based (i.e. pre-1780's) population, which appears to have been much more evenly dispersed both in habitation and placement of religious features.

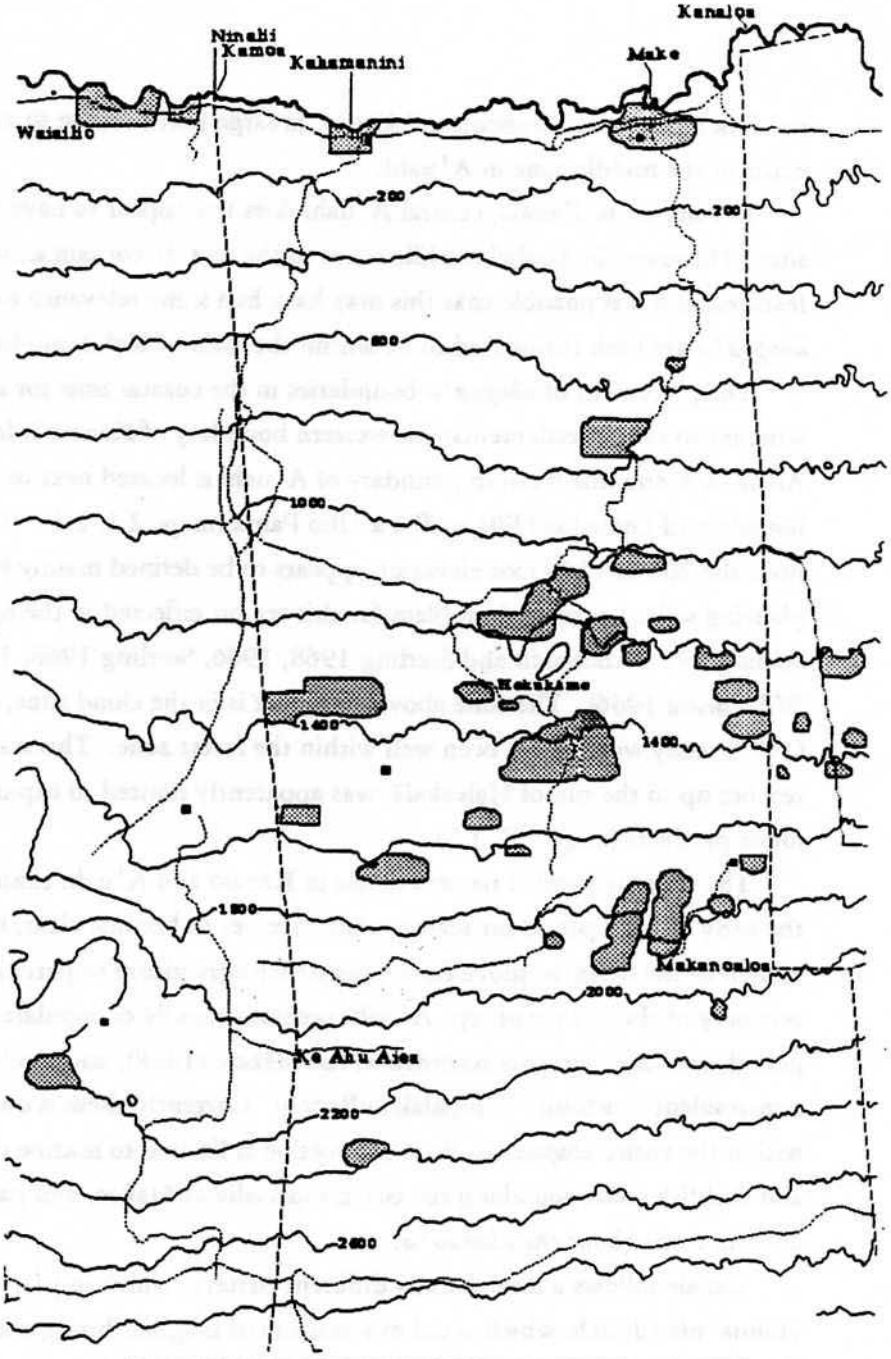
Archaeological Survey

The archaeological survey indicates that pre-contact Hawaiian occupation of Kanaio and A`uahi varied in emphasis. Data for specific sites located in this as past surveys can be found in appendix I. Habitation and food production in *mauka* Kanaio was focused about the cluster called Kanaio (maps 2.2, 2.3), around Honua`ula Church and extending down to Pu`u Pimoe. Habitation in *makai* Kanaio was centered around two coastal communities: one in west Kanaio at Alaha-Wahene, and a second at Wai a`Ilio (map 2.2, 2.3). The coastal communities were linked by the Pi`ilani Trail, and both had trails heading *mauka* to Kanaio proper. Most religious sites were clustered around Honua`ula Church.

Land use at higher elevations than the dense activity in *mauka* Kanaio (from 2500 foot elevation) appears to have been limited to sporadic agricultural production and dry forest exploitation, mainly in dryland crops such as *`uala* and dryland *kalo* (map 1.5). This agricultural zone appears to have extended up to about the 3600 foot elevation, and was defined mainly by limitations in areas suitable for planting. Most of eastern Kanaio, especially below the present highway, is recent lava and both difficult to traverse and very poor for agricultural purposes (maps 1.2, 2.1, 2.2). The trails which run from the coast to *mauka* Kanaio connect a series of isolated *kipuka* within older lava flows with well-developed soils, all of which appear to have been used as planting areas, but outside of these *kipuka* this region does not show any sign of intensive human exploitation (map 2.2). This impression is reinforced in *makai* Kanaio where sites were focused on coastal marine resources, which is also supported by the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966).

While fairly intense use is found in the eastern Kanaio Homesteads property, this appears to date from the late pre-contact and early historic period, and likely reflects the settlement on Homestead lands than viable agricultural production in this area of recent lava (map 2.1).

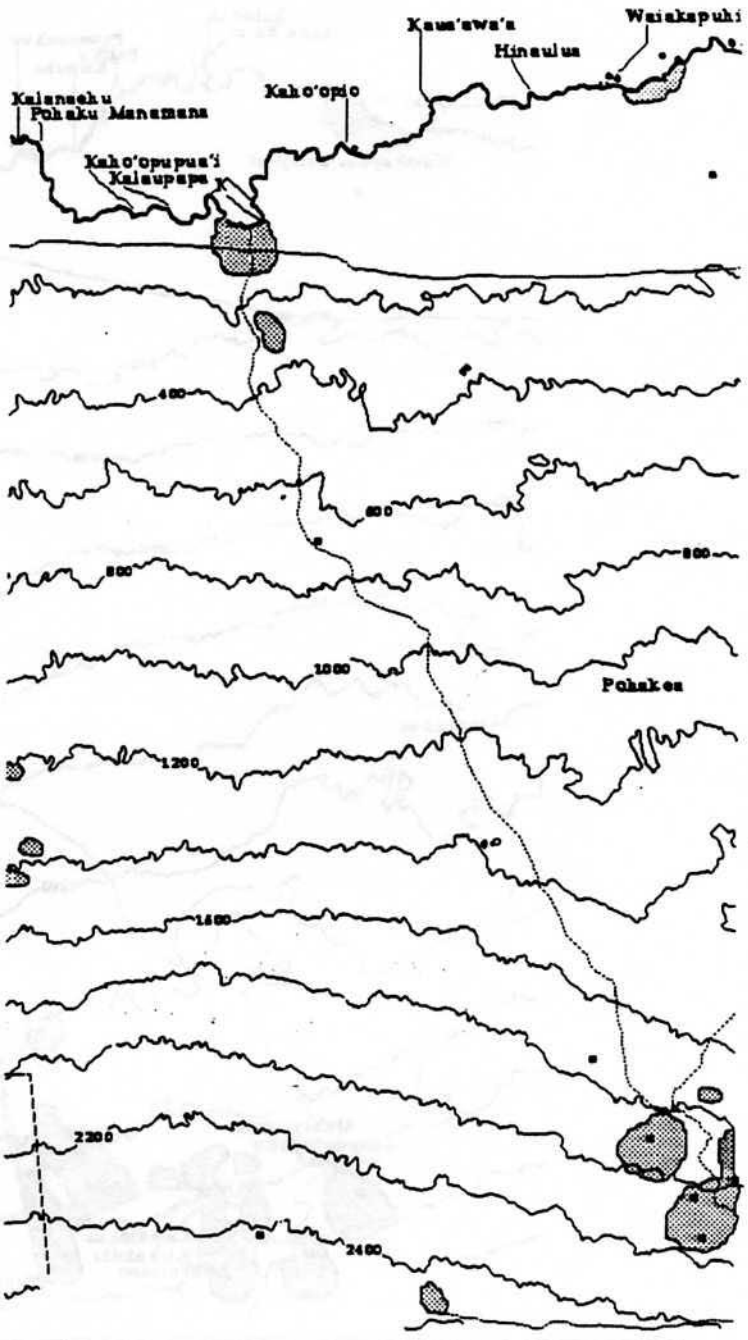
A`uahi has a slightly different pattern of land use, but this is in part because older lava covers most of the *ahupua`a,* and thus contains more developed soils suitable for agricultural use (maps 1.2, 2.1). Complex habitation and agricultural complexes are located throughout the middle of the *ahupua`a* from the 1100 to 2200 foot elevation (map 2.1). Land use, as indicated both by site density and complexity, indicates that this was the primary area of human occupation. A second major area of activity was at the



MAP 3.1

A'uahi
in 1750 A.D.

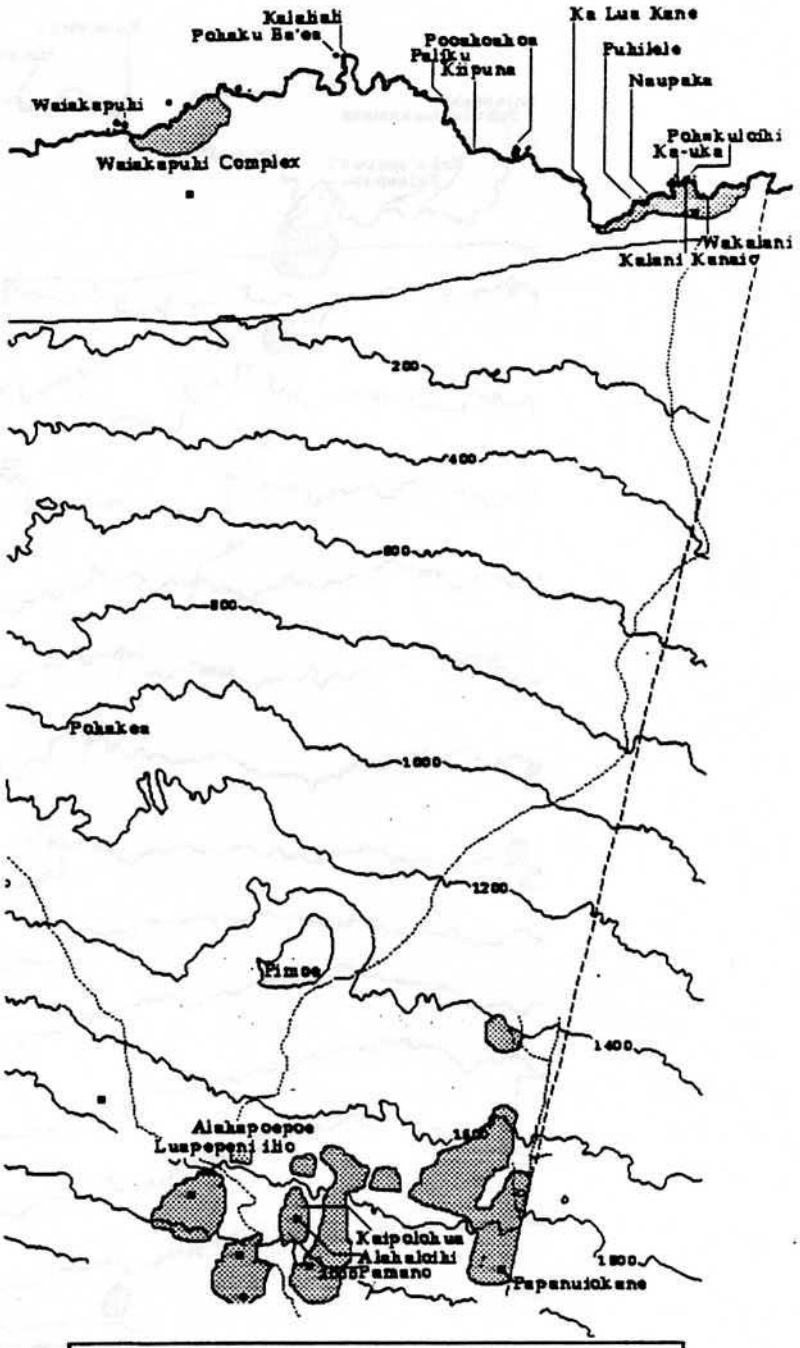
Use Areas
Trails
R.B. 9/94



MAP 3.2

Kanaio
in 1750 A.D.

Use Areas
Trails
R.B. 9/94



MAP 3.3

Kanaio-Kalo'i in 1750 A.D.

Use Areas
Trails
R.B. 9/94

coast, with the very large and impressive Makee village and smaller habitation cluster at Manini (map 2.1). As in Kanaio, coastal communities are linked by the Pi`ilani Trail, and connect with a *mauka* residential area around Hokukamo by *mauka-makai* trails. Unlike trails in Kanaio, those in A`uahi do not link intermediate agricultural *kipuka,* in large part because so much more suitable land exists in the middle zone in A`uahi.

In contrast to Kanaio, central A`uahi does not appear to have had as many religious sites. However the Lualailua Hills cones to the east do contain a large number of religious features, and it is possible that this may have had some relevance to middle A`uahi, as these *ahupua` a* are both considered to be within the *moku* of Kahikinui (map 2.1).

The placement of *ahupua`a* boundaries in the coastal zone for all these *ahupua`a* are adjacent to major settlements: the western boundary of Kanaio is located next to Alaha- Wahene; the western boundary of A`uahi is located next to Makee; the western boundary of Lualailua Hills is Wai a`Ilio Pama (maps 2.1, 2.3). The limited exploitation from the 200 to 1100 foot elevation appears to be defined mainly by lack of water and planting soils, a perennial problem for this region reflected in the oral tradition (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966). The zone above 3000 feet is in the cloud zone, and according to Resnick's (1977) study would have been well within the forest zone. This *mauka* forest zone, which reaches up to the rim of Haleakala, was apparently limited to exploitation of endemic dryland forest products (maps 1.3, 1.5).

The roughly parallel pattern of use in Kanaio and A1uahi changed dramatically during the early historic period for reasons that have yet to become clear, though they may be related to the desire to move from subsistence agriculture to participation in the cash economy of the 19th century. A`uahi becomes rapidly depopulated during the historic period, with no claimants recorded in the Mahele (1848), and modern use is limited to non-resident ranching (`Ulupalakua Ranch). Currently there is only a single household within the entire *ahupua`a.* Food production is limited to marine exploitation, with fishing and shellfish collection along the coast, especially at Makee, and part-time hunting of goat and pig throughout the *ahupua`a.*

Kanaio follows a dramatically different pattern, which in part appears defined by the Honua`ula Church, which acted as a residential magnet during the 19th century. Homestead lands in east and west Kanaio also encouraged continued residence, as witnessed both in the archaeological evidence in eastern Kanaio (in the Homestead lands) and the Land Court Award testimonies for Kanaio lands (appendix IV). This residential pattern has persisted into the present, with moves to resettle sections of the eastern Kanaio Homesteads and the rebirth of Kanaio town.

Elevation-Specific Comparisons between Kanaio and A`uahi

To develop a more accurate picture of the past cultural landscapes of these two adjoining *ahupua`a* it is useful to compare patterns of use within various elevation zones, particularly given the similar climatic conditions. This allows for closer examination of the extremely effective use Hawaiians were making of micro-environmental variations to maximize efficient land use. As noted earlier, there is a persistent theme that late pre-contact Hawaiian culture was facing serious environmental pressure triggered by overpopulation, leading to environmental degradation due to over-exploitation of land resources. Though recently critiqued by Stannard(1989), it remains the major factor in most analyses of change in late pre-contact Hawaiian culture (Kirch 1992, 1985, Sahlins 1992, Cuddihy and Stone 1990, Dye 1989). The archaeological survey in Kanaio-A`uahi found that despite efficient exploitation of suitable areas, there is no indication that land use in Kanaio-A`uahi ever maximized or overstressed all areas suitable for human exploitation. The counter seems to be more common, as a number of areas that appear attractive for agricultural or residential use show no signs of past activity.

Coastal areas such as Makee, or down the coast to the southwest, such as Wailea and Makena, appear to be better examples of areas where exploitation of marginal areas appears to have been intensive in the late pre-contact period (Clark et al 1990, Rosendahl 1984b, Bordner and Cox 1981, Bordner 1980, Schilt and Dobyns 1980, Cordy 1978, Kirch 1971). If Resnick's argument is accurate (Resnick 1977), into the mid-nineteenth century significantly more moisture was falling on the upper south-west slope of Haleakala, which would have resulted in significantly higher seasonal flow at the coast at areas such as Makee, Wailea and Makena. The perception of marginality of coastal areas such as Wailea-Makena may only be a reflection of the denuding of the dry forest belt in the nineteenth century and subsequent drops in water down slope.

While Kanaio and A`uahi were intensively exploited to support a population significantly larger than resides in Kanaio today, the area still had room for expansion of resources should the need have occurred. This is supported by recent work conducted by

Sahlins (1992) and Kirch (1992) in Anahulu which showed that the area was not in maximal production at the time of contact, and in fact production increased after contact with Kamehameha's movement into O`ahu. This supports arguments made recently by various historians arguing that the image of a population at "critical mass" was much too simplistic (Kame`eleihiwa 1992, Stannard 1989).

From the Coast to the 900 Feet Elevation

Care must be taken in comparing the raw numbers fur the coastal regions of Kanaio and A`uahi. If one notes the relative length of coastline Kanaio has almost 2.5 times as long a coastal fringe as A`uahi (see maps 2.1, 2.2, 2.3). Combined with a more convoluted and thus more protected embayment pattern, it would be expected that Kanaio should have had a significantly greater areas of human use than A`uahi.

However, the total number of coastal sites (when compensating for coastal frontage) is quite similar (table 3.1). In both *ahupua`a* coastal exploitation is concentrated around embayments which provide some protection from the extremely rough and dangerous sea conditions that prevail year-round on this coast. In fact it appears that the large number of coastal religious sites is likely a response to the combined lure of extremely rich fishing grounds with extremely dangerous shore and offshore conditions. Even on calm days surf will average 4-8 feet, and safe canoe landings anywhere along this coast are impossible except in the calmest conditions. Any marine exploitation on this coast is risky and requires careful attention to quickly changing conditions.

The two largest communities are both at the west ends of the *ahupua`a* boundaries -Wahene for Kanaio and Makee for A`uahi. A substantial portion of coastal activity in each *ahupua`a* appears to have been at these locations, given the density of features and trails. Both have permanent freshwater springs. Additional fresh (or at least brackish) water springs are fairly common along this coastline and immediately offshore. However, such springs are very rare from the 200 foot to 800 foot level, at least under contemporary drought conditions with loss of the dry forest catchment system. The lack of archaeological features inland up to the 900 foot elevation suggests that the lack of water was also true in the past. The conditions appear to have been the same in both *ahupua`a*.

TABLE 3.1

ARCHAEOLOGICAL SITES BY AHUPUA`A AND ELEVATION

ELEVATION	FORM	KANAIO	A`UAHI
0-600 feet	Religious	6 [104,105,106,111 120,123]	2 [113,114]
	Habitation	4 [205,213,214,216]	4 [207,208,212,235]
	Agricultural		
	Legendary	1 [411]	
	Burial		
	Other		
600-900 feet	Religious		
	Habitation		
	Agricultural		
	Legendary		
	Burial		
	Other		1 [626]
9-1200 feet	Religious		
	Habitation		2 [237,238]
	Agricultural		1 [320]
	Legendary		
	Burial	1 [501]	
	Other		
12-1500 feet	Religious		
	Habitation	2 [240,252]	13 [226,227,228,229,230, 231,239,241,246,247, 248,249,250]
	Agricultural		
	Legendary		
	Burial	2 [503, 506]	
	Other	1 [613]	1 [627]

ELEVATION	FORM	KANAIO	A`UAHI
15-1800 feet	Religious	2 [121,127]	1 [122]
	Habitation	11 [204,217,256,258, 259.260,261,262. 263.264,266]	5 [224,225,232,242,245]
	Agricultural	1 [324]	
	Legendary		
	Burial		
	Other	4 {610,611,628,629]	4 [622,623,624,625]
18-2100 feet	Religious	4 [103,109,110,126]	
	Habitation	2 [251,257]	2 {243,244]
	Agricultural		1 {326]
	Legendary		
	Burial		
	Other		
21-4000 feet	Religious	1 [107]	
	Habitation	4 {215,233.234,254]	
	Agricultural	4 [321,322,327,328]	
	Legendary		
	Burial	1 [505]	
	Other		1 {620]
4000 + feet	Religious	2 [108,125]	
	Habitation	3 [220,221,222]	
	Agricultural	1 [325]	
	Legendary		
	Burial		
	Other		

900 to 1200 foot Elevation

It is at the 900-1200 foot elevation that variation starts to occur between the two *ahupua`a* (maps 2.1, 2.2, 2.3). A key factor is the Hokukamo cinder cone in A`uahi. The area about Hokukamo, both *mauka* and *makai,* was a dense pattern of sites (map 2.1). Several springs are still functional, and several others now dry appear to have served other sections of these sites. As with the Kanaio *mauka* complex (sites 204 and 1006) these agricultural and habitation features must have had water other than just from springs.

The presence of the last remaining lower dryland forest groves of *wiliwili* in this area support Resnick's contention of significantly higher rainfall through misting (Resnick 1977). Hokukamo frequently will mist up, and such mists are more persistent than in surrounding flats. This mist, when combined with the *wiliwili* as moisture capture barriers, and water from springs, give the area a significantly more verdant appearance than surrounding areas even today. In the late pre-contact period, without the grazing animals and with significantly greater tree cover the area must have been highly productive, as is evidenced by the intensive development of agricultural systems around Hokukamo.

While Hokukamo appears to have been the population center for A`uahi, in Kanaio the pattern was considerably different (table 3.1). Pu`u Pimoe is at a slightly higher elevation than Hokukamo, and wind conditions move significantly less mist around the curve

of Haleakala over to this section of Kanaio. The area is much drier than its equivalents in A`uahi, and this, in combination with the convoluted recent *a`a* flows which cover almost all this area and surround Pohikea, obviously limited any major use of this section of Kanaio (maps 1.4, 1.6, 2.2, 2.3).

The only viable areas of habitation and agricultural use are the numerous *kipuka* which stand out as plant and soil oases in the recent flows, but rainfall is sparse and springs are rare. The deep soil, much of which must be aeolian, is excellent for agricultural purposes, and the generally level nature of most *kipuka* mean that little if any preparation would have been necessary for opportunistic planting. This corroborates the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966), as he noted people would plant in areas where soil was present if the opportunity presented itself. These are likely the *kipuka* as he discussed, as many are intersected intentionally by the trails that lead from *mauka* Kanaio down to the coast (maps 2.2, 2.3).

1200 to 1500 foot Elevation

In A`uahi the main concentration of activity was in the area *mauka* of Hokukamo, which is the upper portion of the village complex that surrounds the cone (map 2.1). At this higher elevation a strong correlation between archaeological sites and *wiliwili* groves becomes apparent. Remnant *wiliwili* are limited to gulches and areas where water was accessible. The presence of archaeological sites in the *wiliwili* groves show that the presence of water was also the critical factor in the past. As at lower elevations, the more marginal areas do not exhibit any past use.

In Kanaio this zone has few sites (maps 2.2, 2.3, table 3.1), though in part this is likely the result of intensive clearing of the *mauka* side of Pu`u Pimoe during the last hundred years-first for the prison camp, and in the 1950s for the National Guard Firing Range. Despite the presence of springs at several locations, the lack of suitable areas for planting other than in scattered *kipuka* indicate this portion of Kanaio was a marginal area outside of the few optimal zones, and was not heavily exploited.

1500 to 1800 foot Elevation

The divergence between the two *ahupua`a* is manifested first at this level. In A`uahi there is little evidence of significant use of this zone, with the few site˜ clustered around seasonal streams (map 2.1, table 3.1). The ground has good soil but water, either in surface form or as springs, is in short supply. However, at this elevation there is a significant increase in moisture (largely mist), and vegetation is noticeably denser than *makai.* While the vegetation increases, the visible evidence of human use decreases.

In Kanaio the situation is reversed (maps 2.2, 2.3, table 3.1). While springs are rare, predictable seasonal streams are present, which collect rainfall from the higher slopes. The most spectacular example is the small canyon which runs to the west of the Goodness House, with vertical walls of over 50 feet in spots, which opens into a complex series of water control features in Kanaio *mauka* village (site 204 and 264)(map 4.1). While rainfall and mist appear more limited than in A`uahi, the presence of these seasonal streams provided water for complex agricultural systems. Unfortunately a major drainage, the area *mauka* of Pu`u Pimoe has been completely cleared in the last 100 years, removing any trace of past use. Given the similarity to the Kanaio *mauka* village, and the presence of sites upslope, a second site complex was likely in the Pu`u Pimoe area to take advantage of the available water.

1800 to 2100 foot Elevation

In A`uahi the pattern noted above for the 1500-1800 foot elevation continues, with features of human use becoming ever more infrequent, and in almost all cases tied to seasonal stream flow (map 2.1, table 3.1). It should be noted that this does not indicate that this zone was not utilized. As Handy (Handy and Handy 1972, Handy 1940) notes, planting of crops such as sweet potato, gourds and melons could occur under trees without any terrain preparation. Given the lack of grazing animals, there was no particular reason to limit planting to prepared areas if that preparation was unnecessary. This appears to have been the case in A`uahi.

Even today the vegetation is significantly more verdant than Kanaio at the same elevation. As Resnick (1977) has pointed out, the great attribute of the dryland forest-moisture cycle was not just the presence of trees, but the presence of a mat of groundcover which acted as a moisture barrier against evaporation. To take maximal advantage of the pattern of moisture capture in this environment would require planting in the groundcover instead of exposed raised mounds. Given the excellent soil in this area there would be little need for ground preparation, especially as major clearing of rock would disturb the existing groundcover. Unfortunately this means that visible indicators are lacking, making it impossible to estimate the scale of agricultural production in the dry forest zone.

In Kanaio this zone appears to have been utilized less intensively. In part, this is because of the steeper grade of slope, which means that the seasonal stream flows tend to move quickly in well-defined gulches through most of this section, unlike the more gentle slope through much of the 1500-1800 foot zone (maps 2.2, 2.3, table 3.1). In addition the area around Kanaio town has been extensively modified in recent times and evidence of past use largely destroyed.

The large number of religious site is the most striking aspect of the past cultural landscape of this section of Kanaio (maps 2.2, 2.3). A significant proportion of all the archaeological sites located in Kanaio are within this zone, and the majority of religious sites cluster about the series of linked collapsed sinks and caves which make up the Kaipolohua-Pamano complex site 126 (table 3.1). Other *heiau* encircle the site, including the 19th century Honua`ula Church. The reason for the special significance of the cave complex is unclear, though the Pamano legend was apparently a very powerful one known throughout the islands given the frequent references to it as commonly held property (appendix I Site 126). The lower, Kaipolohua Cave section was used into the early part of the twentieth century for traditional education as noted by Sam Po (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966), who was taught in this cave, so the complex was most likely an educational center from the nineteenth century if not earlier. The pattern of *heiau* in very close proximity to each other is substantially different from the norm, which was of consolidation of religious functions within ever-larger structures as rebuilding and rededication took place under various *ali`i.* Likewise while religious instruction involved some cross-training, the *heiau* were usually of specialized designation and thus operating cooperatively would have been unnecessary (Kamakau 1976, 1964, Malo 1951, Thrum 1909, Haleole 1863, 1862). This clustering of religious structures is the major puzzle of the late pre-contact period in Kanaio, as all the structures appear to have been

in use at roughly the same time.

2100 to 4000 foot Elevation

Sites in this zone are largely nonexistent in A`uahi (map 2.1, table 3.1). Walls and other features in this zone appear to reflect nineteenth and twentieth century ranching activities rather than earlier use. In most of A`uahi this elevation exhibits a significant change in vegetation, first to a pattern of improved pasture grassland with occasional low shrubs, by 3000 feet changing into a mixed indigenous dryland forest of *`ohi`a* and associated species (map 1.2).

In Kanaio the number of both habitation and agricultural features increases in the lower portion (between 2100-3000 feet) of this zone, though the number of religious sites drops drastically (table 3.1). Agricultural sites appear to have been placed to take advantage of soil and relatively level areas rather than concern about access to water, unlike the features located *makai*. This reflects the greater rainfall and misting activity at this level, which is significant even today.

It is in this zone that a relationship between the recent replanting of trees and increased precipitation and vegetation variety has been noted by contemporary long-term inhabitants, specifically those residing in the area since the middle of the 1970s when trees were largely absent. When people started moving back to Kanaio to live fulltime in the mid-to-late 1970s, the area was largely in high grass and scrub, with the exception of two major groves of eucalyptus (a 1930s Civilian Conservation Corps project) and scattered *`ohi`a* in recent lava flows (personal notes). The new residents have planted a number of trees, and there is consensus by residents that the amount of water has increased and the general wind speed has decreased. This would support Resnick's contention about the sensitivity of mist collection to relative height off the ground, and would also help to explain the success of agricultural production in a zone without well-defined drainage patterns for seasonal flow (Resnick 1977).

This elevation zone appears to follow the pattern established down slope in A`uahi of exploiting the relationship between usable water and dryland forest. This would explain the Land Commission Award Testimonies (1846-1849) for parcels in this zone of Kanaio, which involved such diverse crops as potato, *haole* (Irish) potato, *kalo* and sugar cane. Springs are common in this zone but they are not necessarily tied into the archaeological sites, nor do all seem to have been used traditionally.

Above 4000 feet

The highest elevations in both Kanaio and A`uahi do not contain any evidence of prior use. Given the descriptions in early accounts (Resnick 1977) the upper elevations would have been in a complex high altitude dryland forest of mixed species, which at the highest elevations changes down to shrubs and high altitude grasses. It should be noted that technically Kanaio extends all the over the lip of Haleakala into the center of the "crater" and so would encompass the highest elevations up to 10,000 feet. However, for this study the highest elevation surveyed was at 6500 foot level. Handy (Handy and Handy 1972, Handy 1940) has noted that high elevations were limited to specialized exploitation such as quarries for tool material or hunting birds, rather than organized cultivation.

General Comparative Summary

Kanaio and A`uahi were manipulated in the same form and with the same intent. The patterns and forms that the modifications took reflected a shared image of the cultural landscape of this region. Major differences between the two *ahupua`a* are in the elevations which saw the most intensive modification. This appears to be a reflection of the physiographic variations in slope, age of surface material (the recent flows in Kanaio for example) and orientation versus the mist-bearing trades off Haleakala. The only major difference between the two *ahupua`a* archaeologically is the unusual concentration of *heiau* clustered about the Kaipolohua-Pamano cave system in Kanaio.

Common to both *ahupua`a* are the densely concentrated village patterns in the middle elevations. The general perception of this region as being marginal due to limited soil and water reflects physiographic changes which have occurred in the last 150 years due to the impact of western land use patterns. It does not reflect conditions which existed prior to 1780 in Kanaio-A`uahi, which supported a large and stable population, as is evident from the concentrated settlement pattern.

It is not clear what effects the expansion of Hawaiian exploitation would have had on the dry forest. Cuddihy and Stone(1990) are of the opinion that significant damage was likely the result of the increased exploitation of these leeward dry forests regions:

A similar replacement of natural vegetation by wetland cultivation of taro (Colocasia esculenta) probably also occurred in the lower valleys and slopes of windward East Maui, although the history and archaeology of this area are not well understood.

Archaeological investigations of leeward East Maui, however, indicate a large concentration of habitations and dryland cultivation between 400 and 700m (1,310-2,300 foot) elevation in the district of Kahikinui. This complex of sites probably represents a field system similar to those of leeward Hawai'i Island and was apparently developed in the late prehistoric period as an expansion into a harsher, more marginal region. The Kahikinui area is part of the south slope of Haleakala, where vegetation was recently surveyed by Medeiros et al... This study located many remnants of a rich dry-forest flora. A large Hawaiian population clearing land, setting fires, and gathering firewood in and near dry forests and shrublands could have severely impacted the native vegetation and contributed to its decline and present fragmentation. Likewise, a postulated agricultural area upslope of the coast between Kihei and Makena could have greatly disturbed natural dryland vegetation there, a remnant of which was described by Medeiros et al on a very rocky substrate unsuitable for agriculture...

Even the high slopes of Haleakala were visited by ancient Hawaiians, who used a shelter cave at 3,050 m (10,000 foot) elevation as early as the 9th century. Hawaiians were probably traveling to this area near the East Maui summit to gather adz material and to exploit the now-endangered *`ua`u* or dark-rumped petrel (Pterodroma phaeopygia) for food. (Cuddihy and Stone 1990:2)

However, there is a possible alternative explanation. If Resnick's (1977) analysis of tree elevation and water collection is accurate, and if this was manipulated by Hawaiians, as appears to have been the case in Kanaio-A`uahi, then it is likely that impacts were not as extreme as suggested by Cuddihy and Stone. The survival of the remnant forest till the middle of the nineteenth century supports

Resnick's argument. While undoubtedly marked change did occur due to increased human expansion, the concepts of clearing land and setting fires would be contrary to desire to preserve the moisture regime that supported successful planting. In Kanaio-A`uahi it appears that significant sections of the dryland forest survived into the middle of the nineteenth century, though in modified form, as a key component of the Hawaiian agricultural system.

Early Use of Kanaio and A`uahi

Early use of Kanaio-A`uahi by Hawaiians on Maui is at present based on circumstantial evidence due to the lack of excavations and accurate dates for the region. However there is no evidence to suggest a pattern of initial exploitation significantly different from other lee sections (such as Makena to the southwest), for which a chronology has been developed (Kirch 1985).

During the period of initial settlement, from 300 A.D. (arrival) till 1100 A.D., which Kirch (1985) has designated the Colonization (300-600 A.D.) and Developmental Periods (600-1100 A.D.), this section of Maui would have had limited impact from early Hawaiian settlers. The impacts to Kanaio-A`uahi would have been limited to temporary visitations, with emphasis on use of the shore area for fishing and bird hunting in the dry forest. By 1100 A.D. it is possible that a small number of full-rime residents were present in the most optimum areas such as Hokukamo, Pu`u Pimoe, or Kanaio *mauka,* where there was sufficient water and good shore access, but the rest of both *ahupua`a* would have had little lasting impact from the Hawaiian population.

The period from 1100 to 1300 A.D., which Kirch has designated as the initial phase of the Expansion Period (Kirch 1985), would have been a time in which more interest and effort in exploiting Kanaio and A`uahi would have developed. With population increases and other factors putting pressure on the more highly-developed wet zones, increasing interest would have been paid to more marginal areas such as Kanaio and A`uahi. By this time most of the endemic bird population will have disappeared in the dry forest zone. Agricultural development would have seen planting of dryland *ka/o* or yams, and development of the managed dry forest as water catchment system.

Thus by 1300 A.D. there would have been small self-sufficient communities likely located around Hokukamo in A`uahi (between 1200-1800 foot elevation), the area around Kanaio town, and at Kanaio *mauka* (between 1600-2000 foot elevation), all three being areas where soil and water were available. However, in contrast to the pattern of dispersed residence and planting Kirch has posited elsewhere (Kirch 1985:305), settlement patterns in this area would appear to have concentrated at optimal locations:

> The Expansion Period witnessed major changes in settlement pattern and architecture. Whereas during the preceding Colonization and Developmental Periods settlements tended to be small nucleated clusters of dwellings located in ecologically favorable spots, a pattern of truly dispersed residence now began to develop rapidly...
>
> Along with population growth, the Expansion Period is characterized by extensive development and intensification of all aspects of production...
>
> In leeward areas, however, this period was a time of rapid agricultural expansion, as dryland forests and scrub were cleared and various kinds of field systems were laid out.

Oral Tradition

According to oral tradition it was during this period that the system of formal land division and social control was developed. It is unclear what form of land use and control was in place prior to this, but it is likely that it was a system of family-controlled usufruct pattern similar to that found elsewhere in Polynesia. Why the shift occurred from the traditional Polynesian pattern to the much more formalized land control based on abstract bounded areas - that of the *moku, ahupua`a* and *`ili*-- is still a source of discussion. What is clear is that the new system enhanced the social segregation between the developing power of centralized authority under the *ali`i* over the majority population of *maka`ainana* (Sahlins 1992, Kirch 1992, 1985).

It is unclear what visible changes to the cultural landscape would have occurred as a result of this shift to a formal bounded land division system, though certain classes of structures were specifically constructed for this system. The *ahupua`a* boundaries were defined by stone cairns *(ahu)* which were both boundary designators and also focal points for ceremonies reinforcing the legitimate authority of the high chief of the district (rituals conducted during the *Makahiki* cycle). Certain religious sites *(heiau)* were also placed so as to define the *ahupua`a* boundaries. It was common for *mauka-makai* trails to be developed paralleling the *ahupua`a* boundary lines, though there were apparently few if any restrictions existed about actually crossing the boundary (Kamakau 1976, 1964, Handy and Handy 1972, Handy 1940).

Though the *ahupua`a* concept is credited to the *kahuna* (priest or religious specialist) named Pa`ao (Sahlins 1992), the actual definition of the concept must have taken some time, as each *ahupua`a* was supposed to be roughly equivalent to its neighbors in resource base. Given the tremendous diversity in agricultural and aquaculture capabilities even within short distances in Hawai'i a great deal of care must have been taken in defining these boundaries, especially as there are no extent records of *ahupua`a* having been modified, moved or deleted.

The only oral tradition which directly links to Kanaio-A`uahi is a good example of a story structured about place naming:

> [They had two children, a boy (Awahua) and a girl (Aea} The parents went to their cultivating, while the children went to the stream to dig ditches. While so digging, the sister's ditch was broken prematurely, and she was carried along by water without the brother's knowledge. While the brother was digging away at his ditch he happened to glance around and the sister was nowhere in sight, so he started to hunt for her, thinking he could find her quickly. He saw her at Paliakoae, so he chased after her. When he arrived there she had got to Waiailio, and thus he followed after her until she was finally carried out into the ocean. At that time she threw her ivory necklace upon the beach at a place known as Waioaoaku, and it is so named unto this day. The brother was also carried along, and when he came to this place he saw the necklace of his sister there, so he threw his loin-cloth, Puakai, and it landed by the ivory necklace of his sister. They were carried by the current until the sister was landed at Honuaula, Maui. The brother landed at Puuloa, (Oahu). (Fornander 1919:602)

Both the process of legitimizing names and linking locations can be seen in the above story. As most of the story is centered in Kaupo, it appears that it was an attempt to link Kaupo with specific coastal sites such as Waiailio in Kanaio.

Summary: 13OO A.D.

The view of Kanaio-A`uahi by 1300 A.D. is one of a small population based at selected locations of maximum agricultural potential with permanent spring or stream-fed water sources. Several locations around Hokukamo in A`uahi (1200-1500 foot elevation), the Pu`u Pimoe area, and west Kanaio at Kanaio *mauka* (1600-2000 foot elevation) all fulfill this criteria, and were likely locations of early residence. *Mauka-makai* trails were in place, though likely not paralleling *ahupua`a* boundaries as much as connecting upland settlements and coastal use (such as the Pohakea trail maps 2.1, 2.2, 2.3). Several coastal communities may also have had permanent populations in this period, as both Make, Kanaio *makai,* and Wai a Ilio had springs and suitable land for planting in addition to maritime resources, or they may have been only seasonal settlements to exploit fish runs on this section of the coast. *Heiau* were likely placed to affect food pursuits (Lono or *ko`a* shrines) and were based on the family *akua* (ancestors) of the residents.

Kanaio and A`uahi in 1750 A.D.

Major changes occurred in Hawaiian society between 1400 A.D. and 1750 A.D. and the culture was still in a state of dynamic change at the time of formal European contact in 1778. While Kanaio-A`uahi was not in the mainstream of the struggles between major *ali`i* of Maui and Hawai'i, these conflicts must have had significant impact on the inhabitants of both *ahupua`a.*

The major visible change to the cultural landscape from earlier periods was the major expansion of both food production and population into all sections of both *ahupua`a.* While coastal use and habitation saw some expansion, major growth was in upland agricultural zones. While areas of more intensive use were present, the archaeological survey found that all areas above 1200 feet that could sustain agricultural planting had been utilized in at least casual form, with sweet potato mounding scattered throughout both *ahupua`a* up to the 3000 foot level. In addition there was a significant increase in both the number, form, and size of *heiau* in the two *ahupua`a,* especially in Kanaio town.

Kirch (1985:307-308) has called this period the Proto-Historic Period *(c. 1650-1795):*

The political history not only of Hawai'i but of the other major islands as well, during the final two centuries prior to European intrusion, was one of constant attempts by ruling chiefs to extend their domains through conquest and annexation of lands. Campaigns extended beyond the borders of individual islands...

Various cultural elaborations followed the intense rivalry and warfare characteristic of the Proto-Historic Period. Among these were the rise in importance of the Ku cult and the construction of increasingly massive luakini heiau such as `Ili`ili-`opae, Pi`ilanihale, and Pu`ukohola. The kapu system, especially the sanctions surrounding the high chiefs, was certainly further elaborated during this period.

Handy provides a more detailed image of this period, as it included interviews with older informants from the region:

The land section named Honua-' ula on Maui is the flatland (honua) distinctive for its red (`ula) dust ... (Handy and Handy 1972:45)

At Keoneoio on the southern flank of Haleakala, which is a sweet-potato planting area on Maui, there is the story of a man who mistakenly prayed to Makali`i, a demigod whose name he had heard associated with bountiful provender, asking to give him fish.

Makali`i (a name for the constellation Pleiades) finally appeared to him and told him that he could not give him fish. "But," said Makali`i, "plant sweet potatoes"; and he advised that the planting be done in the months of Ikuwa, Welehu, and Makali`i (late October into January, the months of south winds and rains). If he did so, Makali`i promised him a crop of big potatoes. The man did as he was told and had a big crop. One potato was so big he could not dig it out. A hill at Keoneoio was formed by the earth he threw out in trying to dig it up. (Handy and Handy 1972: 147)

...in this account... is said to be "Kahiki". Generally this "hidden land" is visualized as the great cloud mass floating off the windward coast of Maui, and is said to abound in all kinds of foods. (Handy and Handy 1972:151)

There was excellent deep-water fishing available to the folk of Kula and Honua`ula, but it was very poor along the Kahikinui and Kaupo shores; and there was little shellfish and limu. The coast and coast lands of southern Maui are perhaps the poorest in the islands. The sparse population there must have suffered severe famine at times. (Handy and Handy 1972:276)

Maui as a whole is an enigma historically. Its motto, Maui no ka `oi, "Maui is the best," was both geographic in its significance (because of its majestic grandeur) and historical in view of its large domain, including Lanai and Molokai and its rulers' conquests of Hawaii and Oahu. The achievements of Kihapi`ilani, the great ali`i nui who unified all of the island in the 16th century, paved a road around its whole perimeter, 138 miles long altogether, and who stimulated his subjects in all the peaceful arts, constitute a further claim, historically, to greatness.

The enigma referred to is this: Of the four larger islands, Oahu had by far the greatest acreage devoted to continuous production of wet taro; Kauai was second; and Hawaii came third in taro production, most of it mulched or forest grown. Maui produced the least taro. In sweet-potato production it probably equaled Hawaii and outproduced Oahu and Kauai. Of breadfruit, Hawaii probably produced most, Kauai came second, Maui third, and Oahu fourth. Taken altogether in terms of areas cultivated and number of communities, Maui certainly ranked last. In comparison with the other islands, it must have had a smaller population. (Handy and Handy 1972:488)

Westward beyond the high ridges which hem in Kaupo Valley we come to the vast arid waste named Kahikinui. A writer in the newspaper Ke Au Hou (December 14, 1910) says that this region was named by first settlers from Kahiki-of-the-South because of their love of their old homeland. These early migrants must have preceded the volcanic desolation now visible to have chosen it as a place of settlement. Now it is partly covered by what is probably the most recent lava flow from the now dormant crater of Haleakala. It is uninhabited. Fishing is comparatively good along its rugged shores, and in former times Hawaiians lived in isolated communities on the broken lava scattered from one end of the district to the other, close to the sea or slightly inland wherever potable water was to be found in some brackish well or submarine spring offshore. We are told by an old informant, born at Kanaio in the next district, that the Hawaiians formerly living along the coast of Kahikinui had their plantations of dry taro and other edibles inland in the forest zone, where the forests along the southern wall of Haleakala came much lower and where rainfall was more plentiful than it is today. Here, as in Kaupo, cattle grazing over all the higher country have deforested the land...

In Honua`ula (Red Earth), as in Kaupo and Kahikinui, the forest zone was formerly much lower and rain more abundant before the introduction of cattle. The usual forest-zone plants were cultivated in the lower uplands above the inhabited area. Despite two recent lava flows which erupted in about 1750 from fissures below the crater and only a few miles inland and which covered many square miles of land, the eastern and coastal portion of Honua`ula was thickly populated by Hawaiian planters until recent years... Formerly there was much dry taro in the forest zone. (Handy and Handy 1972:5(9)

A few houses are still standing at Kanaio where the upper road (traveling eastward) ends, but only two are now occupied. (Handy 1940:114)

The emphasis on *mauka* agricultural production and coastal fishing mirrors the findings of the archaeological survey and

provides a good image of the cultural landscape in Kanaio-A`uahi in 1750.

Oral Tradition

The eighteenth century was a period of significant social change throughout Hawai'i, and Maui was no exception. One manifestations of these changes in the Hawaiian social structure was the increase in the intensity of warfare between ruling *ali`i* for land and political control, a major portion of which became a long-term struggle for dominance between East Maui (particularly Hana) and West Hawai`i (particularly Kohala and Kona). In the thirty-year period from 1750 to 1780 a series of brutal invasions and battles took place on Maui. This did not involve merely control of conquered territory, but also the occupation by *ali`i* from Hawai`i to East Maui, mainly recorded for the Hana region. From Kamakau (1961) a short chronological summary (figure 3.1) illustrates these changes in political structures and associated increase in large-scale warfare.

As can be seen in figure 3.1 the 1700's was one of nearly continuous struggle which at times spilled directly into Kanaio-A`uahi. The lack of a sheltered coastline suitable fur canoe landings appears to have been the major reason that this region was spared direct invasion, but even so the impacts from threat of invasion, requisitioning of provisions, and drafting of manpower fur the armies and such must have made significant strains on both the population and productive capabilities of the region. Despite its isolation it appears that several times the area was raided by troops, the last being the "plundering expedition" of Kukeawe in 1785 (figure 3.1). While in the fifteenth century it seems that this region was a backwater in developments within Hawaiian society, by the nineteenth century it appears to have been propelled into the mainstream of political and social change.

The oral traditions that persisted long enough to be recorded can be dated to this period. They discuss the final eruptive sequence fur the Haleakala Rift Zone within the context of *Pele,* but avoid any direct mention of the military activity noted in figure 3.1. Of interest is the parallel lack of any references to caves of refuge or *pu`uhonua,* which are common in areas of Hawai`i which were also impacted by these struggles between *ali`i.* This was in contradiction to the archaeological survey for Kanaio-A`uahi, during which a number of lava tubes were located, none of which were obviously man-modified, yet all suspiciously were ideal for use as *pu`uhonua* (appendix I).

The Nineteenth Century and Change in the Cultural Landscape

No early European descriptions of Kanaio-A`uahi exist. The early accounts summarily dismiss this entire section of Maui as dry and barren, but the accounts are from vessels in transit through the channel and thus focus on the coastal area. In addition the nature of use in this region would not have appeared as an organized agricultural system to European eyes. As a result the first documentary evidence of land use in Kanaio-A`uahi, are the formal claims made during the Great Mahele (1846-1849).

FIGURE 3.1

CHRONOLOGY FROM 1750-1790

EVENTS RELEVANT TO KANAIO-A`UAHI

1754: Kalani`opu`u becomes the ruling chief of Hawai`i after conquering Keawe`opala.
In 1754 the ruling chief of Maui is Kamehameha-nui, whose sister (Kalola) is one of Kalani'opu`u's wives.
1759: Kalani`opu`u attacks Kamehameha-nui, conquers and annexes Hana and Kipahulu.
As a result many Hawai`i chiefs settle on Maui.
Kalani`opu`u makes Puna (one of his supporters) governor of Maui lands and commander of Ka`uiki hill (a fortified position at Hana).

1760: After Kalani`opu`u returns to Hawai`i Kamehameha-nui attacks Puna: "...from Heleikeoho to Nahiku."
The men were massed... The field of battle extended from Makaolehua in Akiala to Kawaihau in Honoma`ele."(Kamakau 1961:80).
Individual duels (such as that between Ka`ohele and Kamakauki`i) extended through the "...ahupua`a of Honoma`ele, Kawela, 2 Ku`uku`ukamanu, 2 Kahalili, 2 Kaleleku, Honokalani, Wakiu and half of Kawaipapa ... overtook him at Waialanahu near Pihele... "(Kamakau 1961:81)
After the battle Puna was tricked out of the Kauiki fortification by Mahihelelima "...was an independent chief of Hana, Kipahulu, and Kaupo districts, and his ancestors, both parents and grandparents, had been governing chiefs of that districts."(Kamakau 1961:82)

1765: Kamehameha-nui dies and Kahekili-nui`ahumanu becomes the ruling chief of Maui.
Conflict ensues between Ke`eaumoku (a refugee chief from Hawai`i), who marries Namahana, the *kapu* wife of the recently-deceased Kamehameha-nui. Kahekili sees this as a political move against his control of Maui and war results. Ke`eaumoku looses to Kahekili and flees to Moloka`i, but is pursued by Kahekili. He then flees to Mahihelelima's protection at the Hana fort of Kau`iki.

1775-79: Constant warfare between Kahekili and Kalani`opu`u. First Kalani`opu`u raided Kaupo "...abused the country people and beat them over the head with clubs..." (Kamakau 1961:84).
Then Kahekili met Kalani`opu`u's forces in battle at Pu`umaneone and Kapuka`auhuhu which Kalani`opu`u lost: "...concentrated the battle among the potato hills facing Ki`ei. The attack was led from below ... through the furrows between the hills of potatoes in direct line from Kalaeoko`ilio, the right wing facing Pahonu and the left wing on the east of the cliff at Waipu... slaughtered the soldiers of Hawaii as they ascended the long hill toward Kihapuhala. At Pa`auhau they made a stand... then found refuge in their fleet and rested under the lee of "The point of the dog"(Kalaeoka`ilio)."(Kamakau 1961:84). Of note in this struggle was that when a famous Hawai`i warrior got tangled in the sweet potato vines he was rescued by the till then unknown Kamehameha, who acquired the nickname of Pai`ea (hard-shelled crab) from the Maui warriors because of his skill in battle.

1776: Kalani`opu`u again invades Maui by "...landing at Keone`o`io, their double canoes extending to Makena at Honua`ula. There they ravaged the countryside, and many of the people of Honua`ula fled to the bush." (Kamakau 1961:85) He then marched to Wailuku, when his army was wiped out by the combined forces of Kahekili and Kahahana (ruling chief of 0`ahu and Moloka`i). At the end of the battle Kalani`opu`u swears friendship with Kahekili.

1778-79: Kalani`opu`u invades Maui yet again, "...sailing to Kaupo, clubbed the commoners to death on all sides." (Kamakau 1961:86)
He then sailed over to Kaho`olawe, then on to Lahaina where he met Kahekili and Kahahana again in battle. Kalani`opu`u's army was wiped out yet again.
After his defeat Kalani`opu`u invaded Lana`i and devastated the island, then returned to Ka`anipali, then down to Hamakualoa where he was again defeated by Kahekili. He then moved on Ko`olau where he was joined by forces under Mahihelelima (Hina) and fought for 6 months.

1779: Kalani`opu`u returns to Kailua, Hawai'i during Captain Cook's visit.

1780: Kalani`opu`u dies and succeeded by Kiwalao, with Kamehameha (his younger half-brother) as head *kahuna* for the family *akua*.

1782: Kauiki is finally captured by Maui warriors after it's water supply is cut off, but Mahihelelima escapes to Hawai`i (and killed soon after). After the battle "At the heiaus of Kuawalu and Honua`ula adjoining Kuakaha and Kau`iki are numerous ovens where the corpses of the dead were burned and left to dry in the sun; hence this battle was called Kaumupika`o." (Kamakau 1961: 116)

1785: There is a populist revolt on Maui against a lesser chief. "The trouble arose through one of the lesser chiefs *(kaukauali`i)* named Kukeawe, a favorite *(aikane)* of Kahekili to whom Kahekili had given the privilege of letting his pigs run over the land of Kula and roasting them as he needed them. But he seized also the pigs belonging to the country people of Kula, Honua`ula and Kahikinui, as far as Kaupo, and went with a large party to rob them of their wealth even with violence... When the plundering patty reached Kaupo they were surprised by some fighting men of Kahikinui, Honua`ula, Wailuku, and Waihe`e under `Opu, and their retreat was blocked... Hence they climbed the mountain of Haleakala in order to descend to Kamaole in Kula and fortified themselves strongly at Kapuoa." (Kamakau 1961:142) However Kukeawe was defeated and he was killed, his body "…stuck up like an image toward the sea at Palauea." (Kamakau 1961:142)
Despite the violent end faced by Kukeawe, Kahekili (who was now residing on 0`ahu, a recent conquest of his) apparently decided that the punishment was legitimate for he sent one of his younger brothers, Kalanikupule back to Maui to rule as governor. While Kalanikupule "...ruled over Maui some of the chiefs of Hawaii came over and took up some land at Hana and Kipahulu on Maui." (Kamakau 1961: 143). An abortive invasion of Hana was undertaken by Kamehameha's brother Kepo`okalani.

1790: Eleanora anchors at Honua`ula. Ka`opuiki (a chief) steals the cutter from her stem and kills the watchman. The cutter is taken to Olowalu and broken up for iron. In retaliation Eleanora first shells Honua`ula, then follows to Olowalu, where the captain lures a large number of *maka`ainana* next to the vessel then opens fire, killing and wounding over 100.
Later in the year the mate from the Eleanora, John Young, is abducted by Kamehameha. Subsidiary chiefs under Kamehameha also capture a sloop and massacre the crew except for the mate Isaac Davis.
With the muskets and cannon thus acquired (along with others collected by trade) Kamehameha decides to take Maui. He lands at Hana " ... from Hamoa to Kawaipapa." (Kamakau 1961:148) He defeats the local troops then sails to the main battle at Wailuku, which he wins with the assistance of his European weaponry and takes control of Maui.

Given the evidence elsewhere in Hawai`i, there is no doubt that there were significant population decreases in this region of Maui. The early censuses, which were notoriously inaccurate, especially for outlying districts, show a nearly 50 percent drop in population for the *moku* of Honua`ula between 1831 and 1836 (3,340 population in 1831, 1,911 in 1836) (Resnick 1977:36). This fits the censuses for the island of Maui noted by Sahlins (1992) which shows a 53 percent decrease between 1831 and 1860. The data supports the argument that depopulation was greater in the rural areas, especially the more marginal ones, due both to mortality and outmigration to developing port towns such as Lahaina (Speakman 1981). Population in Honua`ula dropped even more drastically in the next 15 years:

One visitor to Honua`ula in 1846 noted that "The population of this land is now only 80. Mr. White, who has lived on Maui 46 years, says he remembers when it numbered 2000 labouring men. (Resnick 1977 :36)

In 1848 Torbert noted only 6 families in an area encompassing the upland portion of several *ahupua`a:*

...the whole tract lying between the old Mauka Road running from Kula towards Kaupo and the forest, and between Kaloi and Kauhao inclusive... There are about 6 native families in said tract, who cultivate about 12 acres, and there are some 4 acres cultivated by people who live at the Sea Side. (Resnick 1977:35)

But depopulation was not only due to disease or the lure of foreign goods. It was also based in increasing frustration with the inability or unwillingness of the *ali`i* to curb the excesses of the haole, especially in areas of cattle rearing.

Conflicts were constant between Torbert at `Ulupalakua and Hawaiian farmers, as controls were lacking to make Torbert responsible for halting damage his cattle (and likely goats) were inflicting on the farmer's fields or paying restitution (Resnick 1977). The fact that the major crops in the region were vine crops made them even more vulnerable to predation by the uncontrolled herds. The damage also had a more insidious side, as the forest was removed for charcoal and the understory was consumed by the grazing animals, the system of moisture collection and control was destroyed. This situation mirrors that noted by Sahlins (1992) in Anahulu, O`ahu, for the same period, which resulted in outmigration as individuals were unable to farm their land or protect their crops from the depredations of the herd animals. Given this section of Maui's historical pattern of independence from · the Kamehameha Monarchy (figure 3.1) it is no surprise that little effort was made to protect their interests by the government.

This pattern of independence and conservative social patterns is also reflected in the complaints by missionaries for the neighboring Kaupo district, where it was noted that:

The inhabitants of this district are comparatively stupid and ignorant...

Sorcery has been very prevalent of late years in Kaupo. Many have died in consequence, including some of the Kahunas themselves. Many natives have taken lessons in the art. The revival of these horrible practices is attributed by the intelligent natives to the extensive licensing of native doctors by Kapu, about 4 years ago. (Bishop 1839 ms)

A symbol of the new power in the Hawaiian Kingdom was the establishment of the Honua`ula Church, which was first noted in 1828. The modern structure was constructed in 1837 along with a cluster of "school huts" (M. Kelly personal obs.), and was restored in 1908, and was used until the 1950s. The church quickly became the visible focal point of the Kanaio community in the nineteenth century, a position it still holds today. There are no records to indicate the logic which led to the church being placed where it is, but the location next to the dense cluster of *heiau* of major importance (the Pamano group), which included traditional education, cannot be by accident. The policy throughout Hawai`i, as elsewhere, was to place churches on top or next to traditional religious structures to "prove" the superiority of the Christian ethic (Buck 1993). However this struggle between the old and new powers did not always end in a clear Christian victory, at least in Kanaio, as Sam Po noted:

...asked about the pastors of the Kanaio Church, called Honua--`ula. He named all those he remembered.... 3) George Ka-ua-ʾa-lena who committed suicide some time after attempting to break up the stone Po`okanaka, to pieces. (Chapman and Sterling 1966 ms)

Po`okanaka is the *piko* stone located in upper Kanaio near Papanuiokane *heiau,* and is still being used today (personal obs.).

The Mahele (1846-1849), intended primarily to generate revenue for the Monarchy and resolve complaints from Euroamerican settlers for permanent land tide, had a tremendous impact throughout the Hawaiian Islands, not least of all in Kanaio-A`uahi. Unfortunately the impact fell almost entirely on the shoulders of the *maka`ainana* and the uneven nature of both land claims and recorded testimony provides at best a partial view of land use in the period. No *maka`ainana* claims were made for the *ahupua`a* of A`uahi, which became part of the Bernice P. Bishop estate, which implies that it was claimed by right of *ali`i.* It is unclear why the area was felt to be worth claiming. As *ali`i* did not have to provide a description of land use to justify their claim, there is no record of the resources or population in A`uahi in the late 1840s.

Kanaio did have several claimants (see appendix IV) and their testimony provides some insight into land use for Kanaio in the mid-1800's with the pressures of partial incorporation into the cash-based taxation and economic system of the Monarchy. As the testimony had to include both metes and bounds, which were usually defined in terms of neighbors' land, and also predominant land use, these records provide a useful view into the cultural landscape of Kanaio in the late 1840s.

In Kanaio (as elsewhere in Hawai`i) the majority of place names given to specific locations within the *ahupua`a* have disappeared but as the Land Commission Awards still exist. This allowed for the approximation of the named locations in Kanaio (figure 3.3). Land use (or at least land of sufficient interest to claim) was located in two major sections of the *ahupua`a* (figures 3.2, 3.4) and consisted of:

Mauka: A series of claims just *makai* and to the east of Kaimaloo which were in mixed ranching and dryland cropping, in the areas named Kaimalo, `Apu`u, Pepehunui and Manokoha;

Makai: A cluster of small claims near the coast which appear to have been for ranching purposes and possibly named Kuehu /

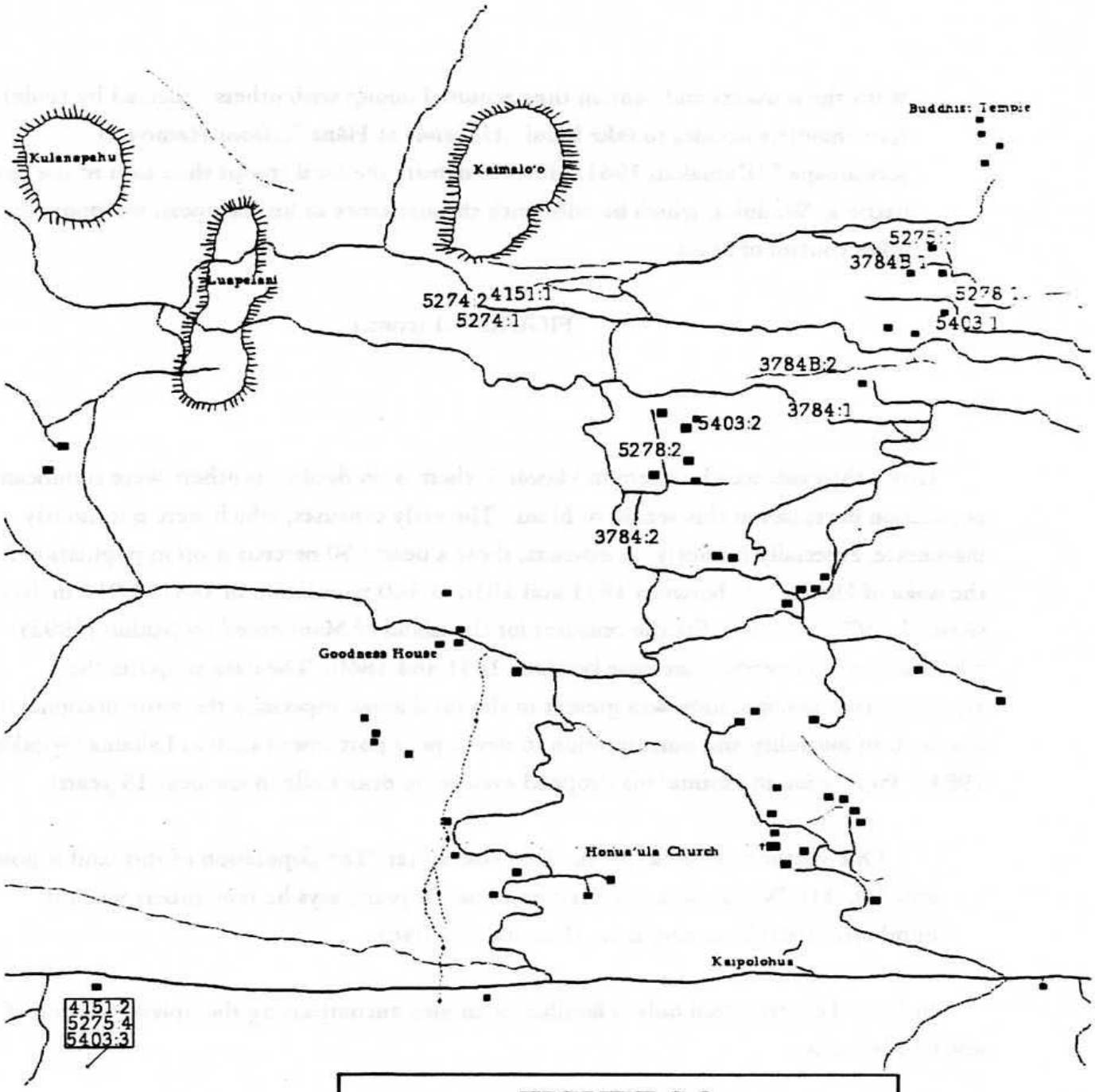


FIGURE 3.2

Land Commission Awards in Kanaio

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Kuehunui.

A key point to consider is the contrast between this very limited pattern of land use with that of less than 100 years earlier (maps 2.1, 2.2, 2.3). The claims were in the *mauka* zone, and most striking is the complete lack of claims in the most productive areas of Kanaio. The lack of any historic sites in A`uahi indicate that the same pattern was followed. The only subsequent claims were either in Kanaio town or lands allocated for Homesteading in the early twentieth century.

The Land Commission Award testimonies describes a pattern of decreased economic and subsistence activity. Fish were a source of barter for *kalo,* and farmers in the area of the church were growing potatoes, pumpkin and bananas. The only major source of economic activity was the Rose Ranch, which operated both as a ranch and a sugar plantation (Makee's)(M. Kelly personal obs.). Even though sugar soon became uneconomical, Rose Ranch (now `Ulupalakua Ranch) continues to be a major source of jobs in the region in the 1990s.

Trails noted in early maps suggest that the pattern of *mauka-makai* exploitation was still intact, which is supported by the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966). The major pattern of traffic was along the series of east-west trails at various elevations connecting Kanaio to Rose Ranch (Makee/ `Ulupalakua) to the west and Kaupo Ranch to the east.

Formal land records for Kanaio-A`uahi must be treated with caution as Kanaio was already developing a reputation as a part of Maui struggling to preserve a traditional identity in changing times. The conservative nature of the inhabitants may have influenced their interest in participating with the Euroamerican inspired formal land acquisition, and it is possible that the Kanaio tradition of land use versus formal (legal) ownership may have developed during this period. The conservative nature of Kanaio society is illustrated by the persistence of traditional activities such as education into the early 20th century:

It was from this home that Sam and the other children walked the 3 miles to Ulupalakua to attend the regular government school.

There was also a school in Kanaio. This was located below the flat of Pamano in the lava tube of Ala-Io`ihi. Kaipolohua was the name of this section of the lava tube which extends makai and is exposed again a short ways below the present government road...

This school in the lava tube at Kaipolohua was conducted in Hawaiian and was for the purpose of teaching students the arts of fishing, planting, etc. Like the old Hula schools, its rules were strict and the students well disciplined. If rules were broken, a second chance was not given. Sam Po attended this school when he was _ years old but was expelled in two weeks for breaking rules. He was caught writing his name with his finger in the dust, clapping his hands with stones in each palm, and...

The teacher of this school was a man by the name of Kauwa. He was the mail carrier from Ulupalakua to Makena... (Chapman and Sterling 1966 ms)

The pattern of land use, control and ownership became more complex with the inclusion of much of Kanaio into the Hawaiian Homesteading program in the early twentieth century. According to State and Hawaiian Home Lands employees the Kanaio Homesteads are a remnant of the Homesteading program run from 1908 to 1913 in an attempt encourage return migration to depopulated rural areas. Unfortunately I have been unable to locate documentary evidence for awards and ownership distribution for this program.

Early tax maps of the district show two distinct sections of Kanaio divided up into 100 acre Homestead lots. It is unclear just who applied to Homestead these lots, or how many of the lots were actively settled. Several house sites located in the archaeological survey correspond to lot boundaries on the tax maps, and one extent house, associated structures and walls (fenced) still intact in the eastern section of the Kanaio Homesteads was the uncle of a branch of the Uwekoolani family. Informants stated that he was the last active resident of the Homestead claims, living there into the 1930s (field interviews).

Kanaio in 1900

For Maui 1900 provides a good baseline for the changes that had affected the island since the late eighteenth century. The population of the island was 27,900, of which over half were recent Japanese and Chinese migrants brought over to work on the plantations (Ramil 1984). The Baldwin family, under Henry P. Baldwin, were the dominant economic and political force on the island (owners of Hawaiian Commercial and Sugar Company), and Lincoln M. Baldwin as sheriff held the most important political office in 1900. One of his police captains (and later deputy sheriff) was Guy S. Goodness, who became a District Magistrate in 1912. This Guy Goodness was the same Goodness so frequently involved in land transactions in Kanaio and became one of the major landowners in the *ahupua`a.* Principal crops were sugar, rice, *kalo,* potatoes, various fruits and coffee. Cattle and other ranching activities were secondary to the economic dominance of the sugar plantations (Ramil 1984). This emphasis on sugar encouraged the development of Wailuku-Kahului and Spreckelsville as economic centers, and made southeast Maui into an economic backwater.

From the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966) the image of Kanaio landscape is one in which the residents were a few families scattered around Honua`u1a Church, though a few lived down on the coast at Kalo`i Kanaio-Alaha and Waiailio. Subsistence was based on sweet potatoes and pumpkins with melons and gourds as supplementary crops. While the area was considered quite good for vine crops it was not considered suitable for root crops such as *ka/o,* despite the Land Court Award testimony (1846-1849) which claimed *ka/o* production in the area. A major focus of the Kanaio community was on fishing and coastal exploitation, to the extent that families would migrate down to coastal residences during the wet part of the year to take advantage of the rainfall to plant in the near-shore area while catching and drying fish and collecting salt. Either by barter or cash poi was imported for private consumption. Though dry, the Kanaio community was still suitable for banana and other specialty crops, though cultivation was difficult.

A major source of protein was goats, domesticated and wild, which were also worked into leather goods. Pigs were also hunted and domesticated, frequently being fed on the fruit of the panini cactus which was prevalent in the area.

As the area was by now very dry, a major source of excitement was range fires, the biggest of which burned from Polipoli to beyond Lualailua Hills, destroying the entire upland forest in at least four *ahupua`a* including Kanaio and A`uahi. While in the short term this provided a great source of charcoal, it must have had devastating consequences to the remnants of the dry forest already under siege by various grazing animals and pigs (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a,

1967b, Pukui and Williamson 1966).

The major source for jobs was either one of the ranches, especially `Ulupalakua, or working for Maui county as field crew. Most of the stacked-stone boundary walls still scattered throughout both *ahupua`a* were constructed by ranch crews including Kanaio residents. Given persistent accusations of over-generous boundary limits which favored the ranch to the detriment of Kanaio landowners, this seems a somewhat incongruous situation, but it was a paying job (at 50 cents a day). The difficulty of finding a good-paying job, reasonable access to schooling, and the inability to compete economically with the big ranches led to a persistent pattern of outmigration. This culminated in the late 1950s when the last full-time residents departed, though it is important to note that it never was a ghost town, as part-time residents always remained. But the abandonment of the Bums and Goodness houses by the 1950's, and the part time residence by the Po and Poaipuni families can be seen as the low period in the survival of Kanaio as a community. In contrast to the pattern of slow depopulation which typified Kanaio during the nineteenth and twentieth centuries, there are no records for any permanent residents in A`uahi during this entire period until the middle 1980s.

Non-documentary evidence

The oral tradition in Kanaio is not limited to the Sam Po interviews (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966), but also includes present inhabitants, mainly those around the Honua`ula Church (lower Kanaio), most of whom can trace genealogical and social ties back to ancestors in Kanaio from the late eighteenth century. Modem residents note that Honua`ula Church had become the focal point of the community by the early 20th century and likely long before that. While literacy was commonplace by the mid-19th century in Hawai`i, the church was nonetheless a key feature in the community. The pastor was frequently the most educated individual in the region, and the church was the main communication link to the rest of the islands, especially the government center in Honolulu. The churches were seen both by the populace and the government as a major communication link. But the church was more than just a communication hub, as it also served as the arbitrator between the rural Hawaiian population and the increasingly Anglicized urban Monarchy. The pastor was frequently more sophisticated in the Anglicization of the country by virtue of his missionary training than the rest of the population, and it is likely that a major task of the pastor was that of interpreter of the changing ways for the rest of the community.

This is easier to comprehend if one understands that the Anglicization of the Kingdom was in large pan developed and pushed through by American missionary efforts in their goal to impart "civilization" to the Monarchy's inhabitants. Church pastors were seen as the key element in the civilizing process, in moral and social education. With the centralization of the Monarchy by the 1850's the need for individuals to become aware of and sensitive to these changes had became obvious to many, especially with the combination of the land dispossession resulting from the Mahele (1846-1849) and the shift in taxation from traditional forms of goods and labor to that of cash payments. The population in rural areas such as Kanaio was isolated not so much by distance as by rapid social change from the urban centers, especially Honolulu. The church and resident pastor were the interface between the rural present and urban future facing the population in Kanaio in the 19th century.

Informants noted that Honua`ula Church was the repository of all written records (births, deaths, marriages, land transactions) and that most were recorded by or with the assistance of the church pastor. This gave the pastor a tremendous amount of power in the community by combining their religious and secular roles. Informants consistently noted this as the reason that other areas of Kanaio had been abandoned - the desire to be near the church and pastor. Several also hypothesized that this was why A`uahi was abandoned, that the distance from the Honua`ula church was too great.

The shift from familial, dispersed populations, into tightly clustered village populations has often been cited as a major result of increased western contact in Polynesia (Resnick 1993). The evidence for Kanaio-A`uahi does not support this argument. The archaeological record indicates that clustered residence was typical long before western contact, in both Kanaio and A`uahi. During the initial period of European contact, a pattern of quick abandonment of settlements occurs in both *ahupua`a*. This suggests that depopulation was likely due as much to disease as migration, with the remnant population settling around Honua`ula Church both as sanctuary and intermediary. Given the success of Kirch and Sahlins (Kirch 1992, Sahlins 1992) in locating historic evidence for residence and activities in Anahulu by the 1850s, it may be assumed (with some caution) that the majority of Hawaiians living in Kanaio and A`uahi had either died or migrated out by the period of the Mahele (1846-49). This would explain both the lack of claims for most of Kanaio-A`uahi and the spatially-concentrated nature of the few claims that were made.

This pattern of acculturation (or struggle against acculturation) has discussed by many authors (including Kame`eleihiwa 1992, Sahlins 1992 and Linnekin 1990, 1985). A major side effect of such struggles was the loss of community identity, power, and link to traditional cultural landscapes. This can be seen strongly in the Sam Po interviews when the anglicized concept of information conflicts with traditional Hawaiian forms:

He [Sam Po] would not talk about the places we were passing, saying, "My old folks told me never to talk about places outside of one's own native district. One should only tell of his own native district, and be honest and truthful in telling it." (Chapman and Sterling 1966 ms)

PC [Po Chapman]: Were these names, up and down this coast, that we've been using all this time-you learned from … who told you the names? How did you learn them and who else knows them?...

SP [Sam Po]: My grand, tutu know all these names. I learned them from my tutu, Kekahuna ... That old man, he know all these grounds...

SP: He know all the place, even my tutu wahine. Tutu wahine know all this place. I used to go with them fishing and they used to tell me my mo`opuna over here a certain name, a certain name 'til I think I'm only one the boy in Kanaio that know all the-

PC: ...these are the names and he knew them and he taught you but I wonder how many people, as you were growing up,- everybody from Kanaio knew the same name?

SP: Nah.--Well, I don't know but—

PC: Other people use the same name?

SP: Well, naturally the big name like Wakalani. Between Wakalani and Kalapawai they don't know…

PC: But the big ones—

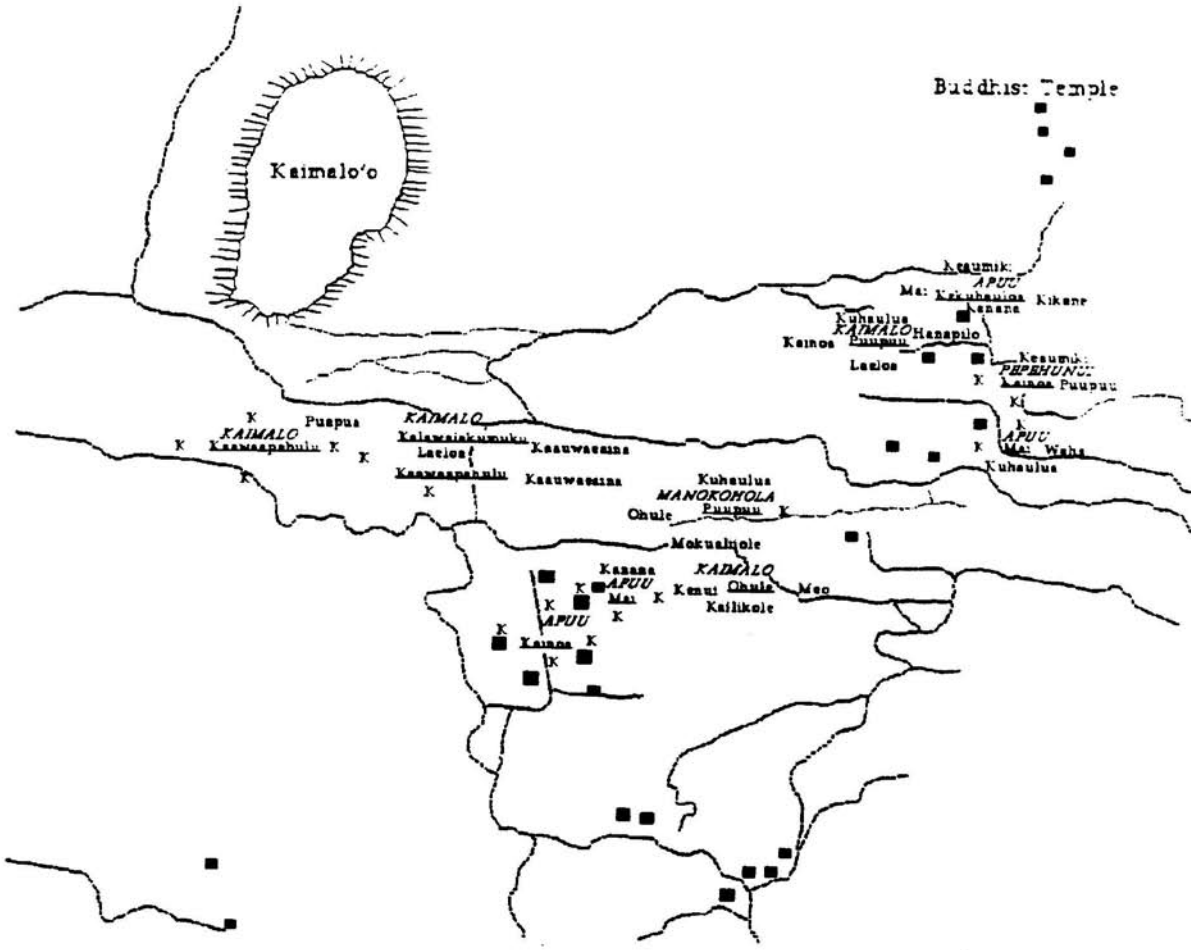

FIGURE 3.3

Place Names, Owners and Witnesses from L.C.A. Testimony

Owners Underlined
Place names in italics

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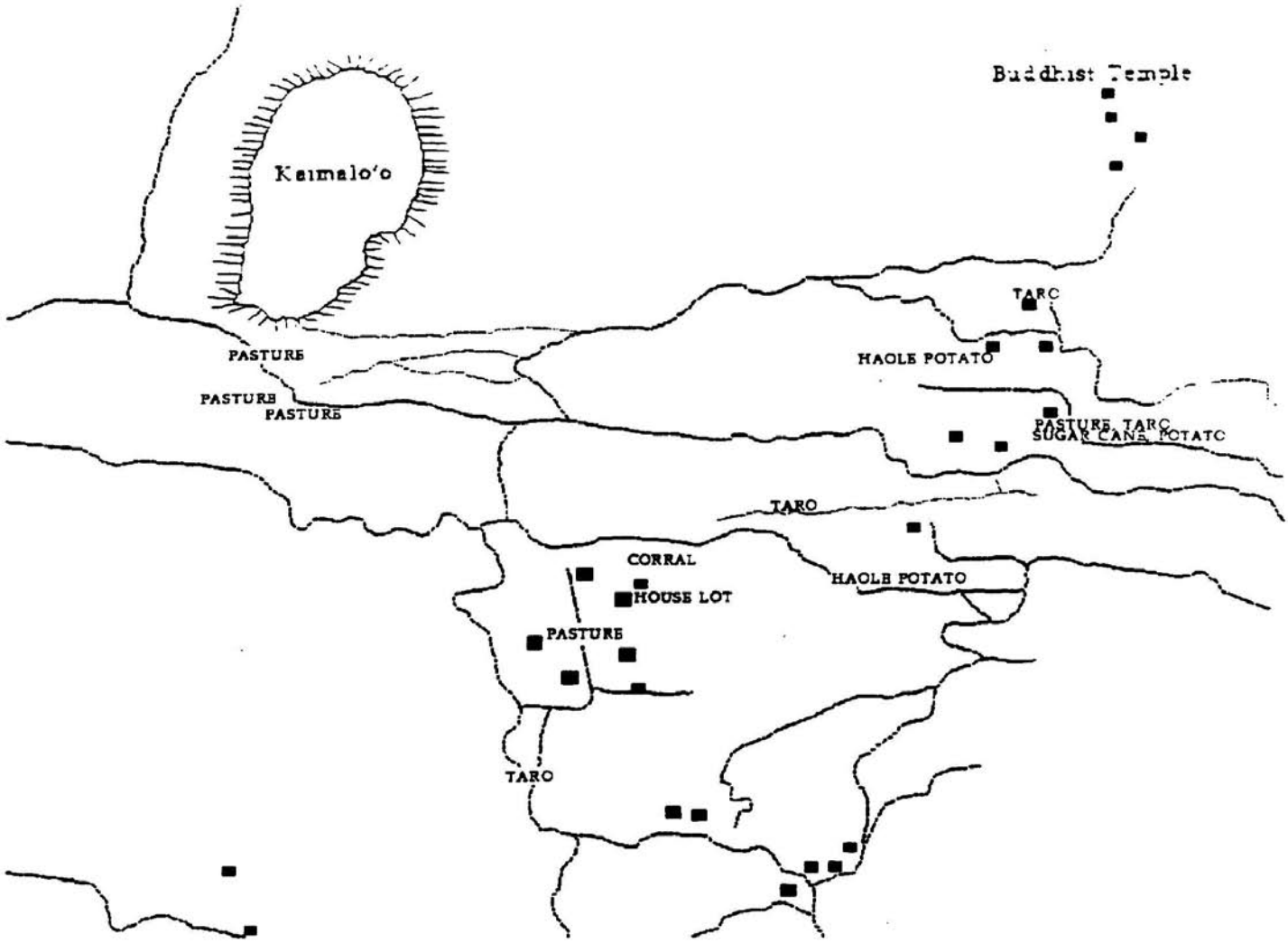

FIGURE 3.4

Stated Use of L.C.A. Lands in Kanaio, 1849

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SP: Ah, they know...

PC: So these names have been handed down to Kekahuna his father?

SP: From his father. Before that he learned...? Before that, lotta people know these names...

SP: Even this one here Alaha, they don't know... They don't know. Well lot of the people even my cousins. He don't know... I'm only one know all the places... (Chapman and Sterling 1966 ms)

As can be seen, the level of knowledge held by individuals and disseminated throughout the community was usually within the familial social structure. Knowledge was power and power was carefully guarded and rationed. Within a stable, largely sedentary population this was beneficial in providing unique identity to each familial group and a sense of shared unique power. But in the turbulent times of the 19th and 20th centuries this knowledge, in almost all cases carried only as oral records, became lost as individuals left or died. The training for such knowledge as place names took place while at the location--the knowledge was not abstract, but linked to the place. Holding and using the knowledge was linked to a firm ownership of certain cultural landscapes, in that you would only discuss areas within "your own district" as Sam notes above. The outmigration and mortality rates in Kanaio-A`uahi made it difficult to transfer the knowledge to interested members of the next generation. This, combined with pressure to conform to the new dominant social order which intentionally devalued all traditional knowledge as "heathenistic" and of no worth, resulted in rapid collapse in the continuity of the traditional cultural landscape in Kanaio-A`uahi.

Interviews with current residents frequently involved some discussion of the impact the loss of these *kupuna* (specifically Sam Po and Jonah Poaipuni) has had on maintaining continuity was the past and the land. Other than the collection of interviews conducted during the Peter Chapman research with Sam Po (Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Pukui and Williamson 1966) no other collections of their knowledge about the land or oral histories were collected. With their passing this continuity with the cultural landscapes of the past has been lost.

CHAPTER 4
CONTEMPORARY CULTURAL LANDSCAPES OF KANAIO AND A`UAHI SINCE 1940

The initial change to the cultural landscape of Kanaio-A`uahi in the territorial period (1900-1959) was the construction of a camp just *mauka* of Pu`u Pimoe for prison road gangs constructing the new highway to and from Kula to Hana. This labor camp continued in use in one form or another into the 1950's.

The Territory of Hawaii suffered major social dislocation as a result of the World War II military presence. Unlike the rest of Maui, Kanaio and A`uahi survived the massive expansion of the United States military during World War II without extensive visible impact. Unlike nearby areas like Kihei or Makena, this section of the leeward coastline was not suitable for landing maneuvers. The extremely rugged surface discouraged large scale movement of men or vehicles. Unfortunately the same inhospitable image made the *makai* section of Kanaio eventually appear suitable as a firing range.

During and after World War II on Maui, as in the rest of Hawai`i, the huge influx of American servicemen, support services, and infrastructure expanded the demand for service-sector services to a before-unimaginable degree. The rural, agriculturally based plantation lifestyle was shattered by the influx of, on Maui alone, tens of thousands of servicemen and women. Central Maui was the base camp for the entire 4th Marine Division (a duty strength of 17,000 men), and on island of Maui had no less than 47 training areas. With installations representing all branches of the military, and related support services, the military population on Maui between 1943 and 1945 peaked at over 30,000. When compared with the resident population of 46,919 (Thrum 1946) the impact of this temporary population can be better appreciated. To this must be added the tremendous purchasing power of this military population, many of whom were in the mood to spend money before or after duty in various Pacific island campaigns (RamilI984, Speakman 1981). In many ways this period was a striking precursor to the tremendous tourism growth of the 1970's and 1980's.

During and immediately the war the areas around the military bases or recreation zones (such as Lahaina) acted as a major attractant for residents, with plentiful work and high wages. To a population used to the highly controlled wage market of the plantation economy the economic boom of the World War II period triggered major relocation. Higher wages increased desire for consumer products that could not be satisfied in the rural hinterland, such as Kanaio-A`uahi. The physical effort and knowledge needed to make an economic living from the land in Kanaio was not of interest to most of the population, especially given the more attractive opportunities on the nearby ranches (which provided free or low-cost housing), or in the rapidly expanding urban centers (Ramil 1984, Speakman 1981). By the 1960's Kanaio had become a near ghost town, with temporary inhabitants who had been former full-time residents, such as Sam Po and Joseph Poaipuni (Murphy 1993, Youngblood 1986, Newman and Sterling 1971, Chapman and Sterling 1968, 1966, Sterling 1968, 1967a, 1967b, Fukui and Williamson 1966). With this loss of economic interest in the land, almost of the *ahupua`a* reverted to open range for cattle.

In the mid-1960's the Hawaii Army National Guard took over the former prison labor camp site, along with the land *mauka* of Pu`u Pimoe, and constructed a small arms live firing range complex (P. Erdman personal comm.). The area of the former camp was developed into a series of bunkered small-arms firing zones and associated structures. Heavier weapons, including automatic weapons, mortars and plane-delivered ordnance such as rockets were fired into the area below Pu`u Pimoe. The Hawaii Army National Guard is still the custodian of the firing range, and still uses the small-arms ranges. The heavy weapons range is no longer active, and all ordnance was supposedly removed at some time in the past, but this lower range is still bounded on all sides by live ammunition warning pylons prohibiting access, and scattered ordnance was noted during the field survey.

Other than increased military use, Kanaio and A`uahi were seeing a total outmigration of the remaining permanent residents in the post-World War II period. A`uahi had been owned by `Ulupalakua Ranch since 1900, and the Ranch actively developed the property with clearing and pasture improvements to handle increased herd density (P. Erdman personal comm.).

Contemporary Images of Place in Kanaio-A`uahi

The elephant of contemporary cultural landscapes making up Kanaio and A`uahi is seen by a number of interested parties. While all groups involved in Kanaio share some images of the cultural landscape, each group also has aspects of their cultural landscape that are unique. A further level of complexity exists, as each group consists of individuals, who, on one hand share a number of images, yet a number of other factors, including length of residence, religious attitudes, and differing individual perceptions make every individual cultural landscape very personalized and idiosyncratic.

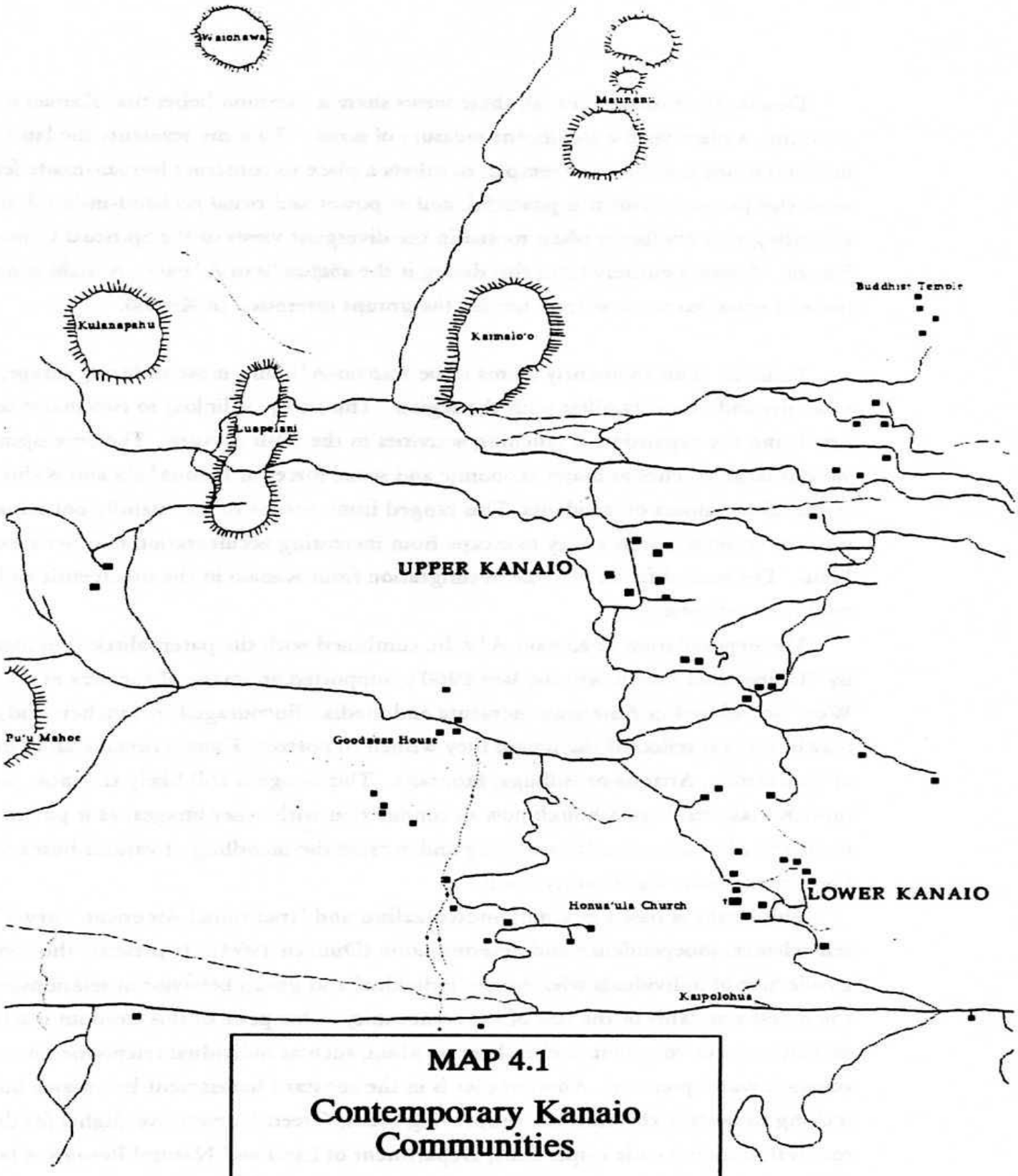
These layers of commonality and diversity are at the core of the controversies with the concept of the cultural landscape in cultural geography.

Even at the level of individuals it is possible to see patterns of shared images, patterns which reflect values and beliefs held in common by a group -the Cultural landscape. This complexity of image and perception has been discussed in depth by Vale and Vale (1989) and Duncan (1993) for the American West, with Meinig (1979) and Jackson's (1984) work at a more general level. Vale and Vale (1989:4) have noted that:

> This recognition of the variety of feelings toward and interpretations of landscape is not, then, meant to suggest that such reactions are without bounds or patterns. Rather, the diversity itself might be part of the organized generalization. Somewhere between the monolithic characterization of an entire society and the chaotic variability of individual differences are generalizations about landscape meanings that represent the values of large or otherwise significant segments of a human society.

Their conceptual structure for sets of regional landscape meanings has been applied to this study as a means to illustrate the competing nature of the various groups who interact in Kanaio and A`uahi. From the written materials, interviews, and the physical changes people have made to the land I have developed a series of images which define each group's characteristic views of Kanaio-A`uahi. The views held by various groups interact in a number of ways:

> They are not mutually exclusive; many overlap. Some are similar to one another but vary in emphasis or perspective. Some contradict each other; others are more compatible. (Vale and Vale 1989:7)



MAP 4.1

Contemporary Kanaio Communities

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For Kanaio and A`uahi the contemporary cultural landscape images fall into five main categories. These categories are not mutually exclusive, and can in some cases be shared by a wide range of groups in Kanaio. In other cases the category reflects a series of images held by only one group. The fact that two distinct groups share a set of images (a category) does not mean that they share the same values and attitudes toward the place, and in fact in several cases different groups share one category of images and yet are widely diverse in others. The categories are based on those developed by Vale and Vale (1989)(figure 4.1).

Raw Nature: This is the most visible image for the first-time visitor to Kanaio-A`uahi. At present this region is a transition area between the tourist locations to the west (Kihei-Makena-Wailea and Central Maui) and Hana to the east (map 1.1). The change from the moist and relatively lush vegetation of Kipahulu (east) or Kula (west) to the very open, treeless and barren area typical of Kanaio-A`uahi comes as a shock to many visitors. Tourist brochures and travel guides usually only mention this area in the context of warnings and cautions: lack of facilities; poor roads; and harsh, barren landscapes (Ariyoshi 1993, Kepler 1987, Youngblood 1983). It is an area to get through as quickly as possible on the way somewhere more inviting and closer in image to the lush tropical paradise so heavily promoted for Hawaii in general and Maui in particular.

This section of East Maui is unique in the contributions the general landforms make to this image, fur the combination of the Haleakala rain shadow promotes low rainfall, clear horizons, and frequently clouds cover the distant verdant regions. Combined with the long lines of sight on this side of Haleakala, the impression is of long natural vistas, uninterrupted by any features other than scattered cinder cones (plates 1.1, 1.2, 1.5). This is enhanced by the lack of visible indication of human occupation, past or present, which reinforces the image of Kanaio-A`uahi as an area of primeval nature, disinterested or possibly even hostile to human intrusion.

The coastal zone is by far more striking in this imagery. The lack of paved roads means the jeep roads quickly disappear in the broken *a`a* of the same color and texture (plates 1.3, 1.8). The erratic ridges and complex forms of the recent lava, most either black or dark red-brown, do not follow any regular lines. The pre-contact structures, made of the same material, vanish even at close range, and the only noticeable features are the coral markers for foot trails. This very dark and erratic surface, combined with the bright sky, strong winds, blue sea and the invariably strong surf, produce a striking picture of nature in contest with itself. People are not part of this environment, which works at a massive scale, with the entire horizon consisting of these elements unrelieved by visible human intrusion.

Home: This image is the one held most close by the Lower Kanaio community. As the majority of the Lower Kanaio community have genealogical links to the land through Hawaiian ancestors, the Kanaio community can be generalized as a modern manifestation of traditional cultural values and beliefs. However this is a major oversimplification of a very complex group in which membership is expressed mainly through kinship, and is based within a cultural system in which kinship has emotional and spiritual ties much more complex than the Euroamerican norm.

An often-overused and now trivialized term of *`aina* has been used constantly to express this link to land within myriad religious, emotional and kinship ties. The most technologically accurate term would be the formal anthropological use of the term clan, which describes a group of people who believe themselves related. As in the rest of the Pacific the clan in Hawaii includes the living, dead, as-yet-unborn, and the founding ancestors who were more-than-human (Sahlins 1992, Bonnemaison 1985a, 1984, Linnekin 1985, Doumenge 1982, Leenhardt 1970, 1947). The ancestors were god-beings who not only can take various forms, but also in the past shaped the physical landscape and placed their descendants as caretakers upon it. Despite changes in relationships to land in the late pre-contact period, the complex religious, spiritual and kinship ties to land as expressed in the clan concept persist as a fundamental part of Hawaiian cultural identity (Sahlins 1992, Kame`eleihiwa 1992).

In this system images of place reflect familial history and events, a land peopled with kin and mementos. The landscape is a family scrapbook, manifesting the past, present and future. It discourages outmigration and rewards tradition. It feeds, encourages, nurtures and protects. It provides a haven and spiritual support when needed. The closest parallel in contemporary American culture would be the "returning home" images so beloved around Christmas time, with the warm home beckoning during the evening cold--the haven.

Spiritual Center: The spiritual center image is possibly the most complex and controversial for Kanaio residents. Some of this tension is a result of the historical power struggle between traditional belief systems and the imported Christianity, as manifested in Honua`ula Church and its intentional location in a complex of *heiau* as a physical statement of relative religious powers. However, the spiritual center image also reflects contemporary competing views of the sacred nature of the Kanaio landscape, sometimes using similar terms, generated by very different cultural and ritual backgrounds. The most visible divergence is between the Lower Kanaio community, based on the clan and *`aina* concepts, and the Upper Kanaio community with the sacred place or power locus concept (appendix III).

Both groups base their images within the traditional anthropological concept of *mana* or power, and both involve the acquisition and manipulation of this power for various needs or goals. Divergence occurs when discussing how this power is acquired, who has legitimate control of it, and how it should be used. This marks a very unique pair of ritual cultural landscapes, neither which bears a close resemblance to earlier historic patterns. As if this was not sufficient, superficially similar yet in detail quite different ritual landscapes based on the spiritual center have been generated by New Age groups from other pans of Maui, O`ahu, and the mainland United States, some for personal development and others for economic gain (or both).

Despite their differences, all these views share a common belief that Kanaio is ritually powerful, a place with a significant measure of *mana*. To some residents the land in all its manifestations is a shrine or temple, to others a place to construct human-made features to serve this purpose. But it is powerful, and as power and ritual go hand-in-hand, it is not surprising that conflict is often rooted in the divergent views of the Spiritual Center images of Kanaio. Missing entirely from this dialog is the *ahupua`a* of A`uahi. A`uahi is not seen as a place of equal *mana,* or at least not for the groups interested in Kanaio.

Frontier: This frequently seems to be Kanaio-A`uahi's most enduring image, both to residents and others familiar with the region. This image is linked to two major factors, the first being the expansion of ranching activities in the 19th century. The development of the various large ranches as major economic and social forces in Honua`ula and Kahikinui had a tremendous impact on residents. This ranged from means to successfully participate in the western economy, or as a way to escape from increasing acculturation in other sections of Maui. The second factor was the outmigration from Kanaio in the nineteenth and early twentieth centuries.

The depopulation of Kanaio-A`uahi, combined with the paternalistic dominance enjoyed by `Ulupalakua Ranch into the late 1960's, supported an image of the area as the "Wild West" so beloved in American literature and media. Encouraged by ranchers

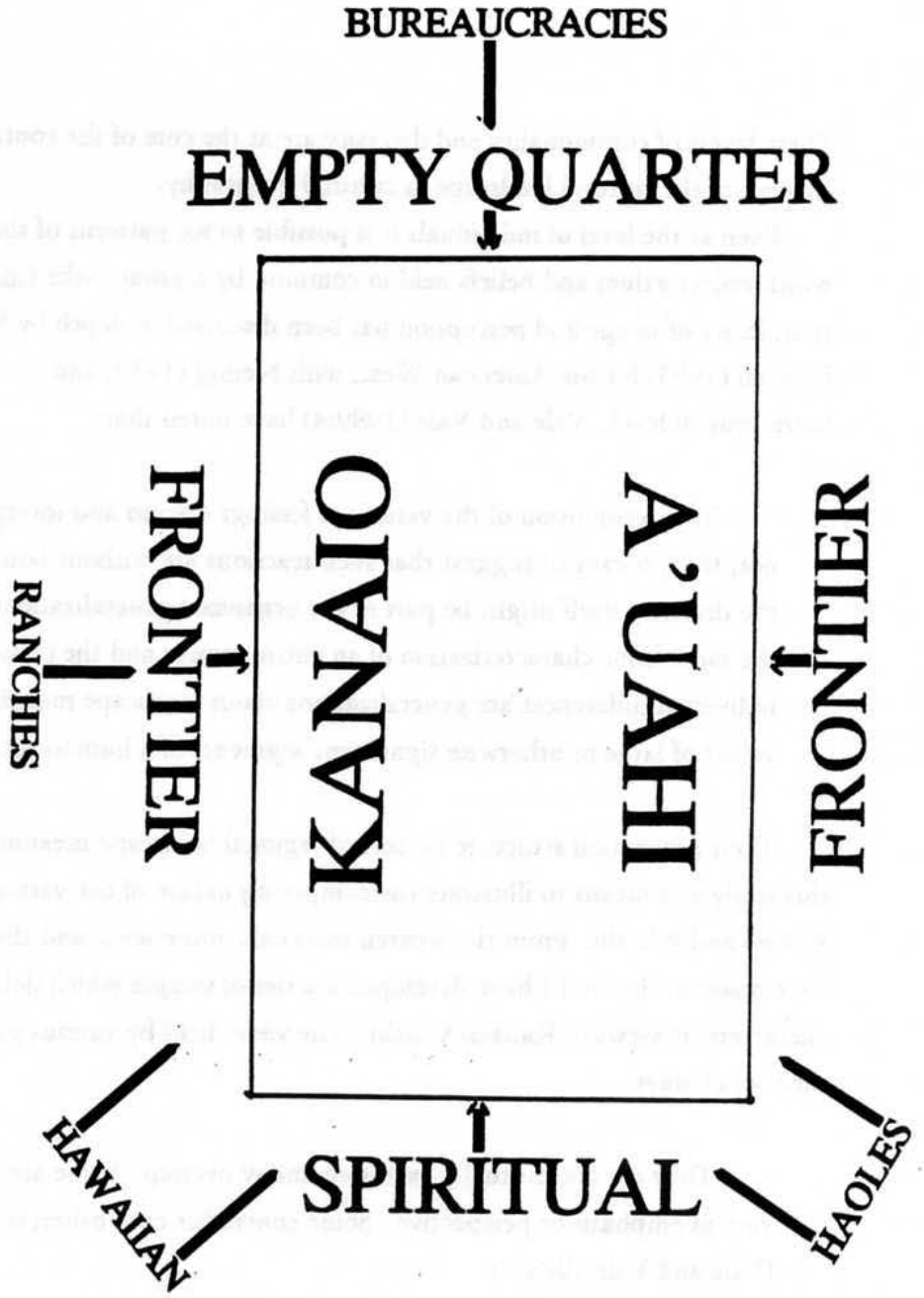

FIGURE 4.1

IMAGES OF KANAIO-A'UAHI

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and *paniolo* (cowboys) as it reflected the image they wished to portray, Kanaio became an island extension of Tombstone, Arizona or Billings, Montana. This image is still likely the most popular for most Kanaio residents (though now in conjunction with other images) as it portrays their town and *ahupua`a* as self-governing and outside the meddling of various bureaucracies at the Federal, State and County levels.

This image is based in strong individualism and "traditional American virtues" of self-reliance, independence and determination (Duncan 1993). It presents the community as a collective of individuals who decide individual and group behavior in relationship only to the moral standards of the rest of the community. One price of this freedom is a lack of amenities taken for granted elsewhere on Maui, such as individual telephone lines and constant water pressure. Another cost is in the constant harassment by various bureaucracies seeking to destroy this freedom (improving roads, Green Harvest overflights for drug removal, building code inspections, Department of Land and Natural Resources land designations) and incorporate this unruly area into "tame" Maui society.

Empty Quarter: This image holds that Kanaio-A`uahi is an uninhabited area appropriately controlled by distant bureaucratic agencies. In this view the land is passive, an area that can be used, manipulated or changed at will, based on demands and concerns outside the area itself. This image differs from the other categories in that it really contains no image at all, just a passive empty location, a space on a map that can be filled.

This is the image held by external agencies involved with Kanaio at the State and Federal level. At the level of Maui County the image fluctuates between disinterest, recognition of the Kanaio community as an entity and the Empty Quarter, sometimes all playing simultaneously in different departments of the County administration. It is this view of Kanaio and A`uahi as the Empty Quarter which engenders the most heated debate between Kanaio residents and outside agencies. It also acts as a unifying force for most Kanaio residents: regardless of how much they disagree about image and perception of Kanaio, none of them see it as Empty. The best examples of the bureaucratic image of the Empty Quarter are the State of Hawaii's handling of a land ownership dispute with the Uwekoolani family, the planning process for the Geothermal powerline, and Federal involvement in the area. Locations appropriate for Natural Area Reserve status without full understanding or interest in related land issues (the Uwekoolani case), or for major powerline construction without full environmental assessment are passive and distant. A place deemed suitable for live ammunition practice certainly qualifies as the Empty Quarter.

Lower Kanaio and the Hawaiian Cultural Landscape

Contemporary Kanaio is unique for several reasons: first is the physical and social separation between two distinctive communities, designated the Upper Kanaio community and the Lower Kanaio community. The Upper Kanaio community consists almost exclusively of individuals who have arrived in Kanaio as recent migrants (post 1976), and have no genealogical or historical links to the land. The Lower Kanaio community are members of the Hawaiian families who have genealogical ties to Kanaio who see themselves as returning home.

The second unique aspect is that the Lower Kanaio community essentially abandoned Kanaio as a place of fulltime residence for over a decade. From 1963 unw1976 the *ahupua`a* of Kanaio had no permanent inhabitants, and all structures excepting two houses and the Honua`ula Church had disappeared (field interviews, P. Erdman personal comm.). The migrations that repopulated Lower Kanaio occurred simultaneously as the move of new residents into Upper Kanaio, but the two communities developed in distinctively different directions and remain distinctive today. While return migration to areas has occurred elsewhere in Hawai`i, the resettlement of a community by its former inhabitants and their descendants after a decade of abandonment is unusual.

The Lower Kanaio community can be defined as the residential zone bounded at the *mauka* end in the west from the Goodness House along the 2400 foot contour to a point below the reservoir as the east end (map 4.1). Pu`u Pimoe is the *makai* boundary. While the majority of residents are located along the upper Kanaio road or the network of jeep roads that extend between the upper road and the Highway, two secondary residential clusters also exist. The first, the *mauka* west cluster, is located along a jeep road that extends from the main Highway up to the upper Kanaio road just beyond the Goodness House (map 4.1).

The second cluster is *makai* of the main Highway at approximately 1400 feet, west of Pu`u Pimoe, and below the other secondary cluster. These two clusters are visibly separated from the main lower Kanaio community both in access and distance, to the extent that most of these residences are not visible from the main community (map 4.1, plates 1.1, 1.7) and vice versa.

While Lower Kanaio is labeled here as a Hawaiian community this is a generalization. Several residents are not Hawaiian either by kinship or cultural background, and are in fact in two cases migrants to Hawaii. However, most of the community is part-Hawaiian, and more important than kinship, the attitudes and values of this community are strongly based on the traditional Hawaiian social system. Individuals moving into Lower Kanaio are expected to embrace the cultural logic of this community even if kinship are missing, and a common area of discussion about individual behaviors is in the context of fulfilling or contradicting these social patterns.

Excluding a few anomalous residents this community holds two major images of Kanaio -- Kanaio as Home and Kanaio as Spiritual Center.

Kanaio as Home

Almost all of the Lower Kanaio community is residing on land which they feel they have genealogical rights. This is frequently the first reason residents express both for residence choice and also for returning to Kanaio in general. As the families residing in Kanaio are all related to common ancestors this frequently leads to dissension about rights of access and use in Lower Kanaio. As people did not return as a single unit, and are in fact still returning to Kanaio in significant numbers, confusion and resentment has resulted from a number of causes. These include:

The First Home phenomena: In a form of migratory primogeniture, the residents who returned first (1970-1985 period) took the best lands for residence or to work. Claim is based on the dual pattern of kinship ("it belonged to our family") and first returned ("when I returned there was no one here working the land, so I settled on the section that I could use")(field interviews). This tends to create friction between some of the older residents (time in residence) and more recent returnees who find themselves in less-desirable locations, though their claims may be as good or even better than those of the earlier returnees.

Increase in Descendants: The older generation (50 years of age and older) who still carry memories of residence (or at least use) in Kanaio prior to the outmigration of the 1930-505 have the strongest claim to the land, as they can populate it with people, events

and named places. This legitimizes their control of the cultural landscape in a traditionally appropriate fashion (Chapter 3). However, this generation is passing away, the most significant recent loss being Jonah Poaipuni (Youngblood 1986). The disappearance of this generation and their complex ties to the land has had a major impact on the Lower Kanaio community, who feel the loss in traditional links to the Kanaio landscape. The younger generation of returnees is significantly greater in number than their parents, and this is causing increasing stress as individuals, families and extended families try to juggle limited land claims, increasing familial pressure to find land, and the desire to keep space between families. This pressure has led to conflict on several properties in regards to legitimate claim to land, with several active cases underway contesting control and access to land between individuals. Most of these cases are motivated by increasing pressures within families, forcing them into conflict with distant relatives over land issues that all sides had been aware of for some time but were able to avoid resolving as long as land was plentiful.

The desire to avoid open conflict is typical of Lower Kanaio where avoidance is the normal form of conflict resolution. This pattern has apparently been manipulated in at least one case by individuals willing to become involved in conflict, who get others with possibly more legitimate claims to land to back down or face open strife. This conflict avoidance is a hallmark not only of Lower Kanaio, where it is a part of the traditional Hawaiian social system, but also in the Upper Kanaio community. However this pattern of avoidance manifests itself within each community rather than between communities. Members of the Lower Kanaio community are more apt to engage in conflict over land control with members of the Upper Kanaio community, whom they (Lower Kanaio residents) feel lack legitimate claim (by virtue of genealogy) to the land. They invoke traditional concepts of land control (such as *`aina),* and of giving the land to descendants as strong positive values. This also devalues selling the land for profit, especially to outsiders, as this reflects the American emphasis on individual land ownership and cash investment which competes with the traditional system they value so highly.

The central image of Home is that of home as social networks, or home as familial roots rather than home as a place of residence. It is interesting to note that the very strong emotional value placed on genealogical link to place, which is found not only in Kanaio but is expressed frequently by contemporary Hawaiians is at odds with the non-land based form of control found during the last pre-contact and early Monarchy period. In fact the founding ancestors the Kanaio families trace legitimate land control to were part of Kamehameha's ordered migration to control Maui populations, rather than being traditional Maui families. The intervening 200 years has taken the relationship with the land back to the more traditional land concepts in Hawaii which predate the usurpation by the *ali`i,* to the older form of land as controlled by extended families (clans), as in the rest of Polynesia (Chapter 3). When the Lower Kanaio population invokes land legitimacy they do it within the old system, which as both Sahlins (1992) and Kame`eleihiwa(I992) note was never completely supplanted by residence controlled by elites. The power this view still holds can be seen in the fact that most residents must commute long distances on poor rural roads every day to get to work, go shopping or send the children to school, yet have made a conscious decision to move to Kanaio despite these difficulties.

The older system was only successful within a strong extended family system with a coherent system of rules and regulations, especially as to whom would have access to resources. This was traditionally handled by family elders, frequently with an individual(s) appointed to represent the family and resolve disputes between family members. In most of Polynesia this individual would be the family *matai* (headman), whose decisions controlled family members (Kamakau 1976, 1964, Malo 1951).

In contemporary Kanaio the small extended family is the norm, usually with three generations of kin present--parents, grandparents and children. The larger extended family unit of traditional form is now a loose association, and senior males (and elders) have at best only power of coercion to control family members. This becomes clear when looking at returning migrants, who though family members, are moving onto more contested properties while the older (residence-wise) members stay on their land. This is reflected also in the conflicts re Kanaio Hui land, where ownership for some families is only 1/256 of approximately 101 acres (or 0.4 acres)(County Tax Records, `Ulupalakua Ranch ms). Though the ownership is extremely small, the reality on the land is that those who have set up residence control significantly greater percentages than their legal title gives them access to as individuals. In some cases they are consolidating other absent family member claims (or deceased individuals), but since Kanaio Hui land was never formally divided up, earlier returnees selected the most attractive portions of the communal property, leaving later returnees the less-desirable portions. Not surprisingly this leads to conflict and bad feelings about earlier arrivals co-opting the prime real estate and leaving others small and more unattractive sections, with length of stay taking precedence over legal percentages.

The situation becomes even more complicated when one considers that with the complete outmigration from 1963 until 1976 no family members were left to maintain the land and appropriate boundaries. This clouded responsibility for paying taxes due on property and other legal matters, the result all to frequently being loss of the land due to lack of interest by family members prior to the 19705. In Kanaio land frequently was repossessed by the Territory (State of Hawaii) for nonpayment of taxes, though there were family members alive elsewhere on Maui. Even in situations where a family member or group was paying taxes on the property, the property was sometimes sold out from under them by other family members, or in one case used to pay gambling debts incurred by a family member (`Ulupalakua Ranch ms, field interviews).

While this led to a tangle of clouded ownership rights, the issue did not become critical until the 1970s when family members decided to return to Kanaio, at which point these unresolved issued reappeared. The title to the land may be clouded as the Territory/State may have repossessed the land for nonpayment of taxes, though several families insist they were paying (and in at least one case are still paying) the proper taxes. Second, as there is no authority delegating access to land, somewhat of a free-for-all results, with earlier returnees collecting the best land, though their claim may not be the strongest. 'First Come, First Served' seems to be a common rule on much of the family land in Kanaio. Friction not surprisingly results when other family members, in several cases including those who have been paying the taxes, try to move back and find the best land all taken by relatives. Traditionally this would be resolved from within the larger extended family through the application of the control by elders and family leaders, but today these do not have the power to adjudicate disputes. The result is resentment and tensions within the larger extended family or clan units, exacerbated by a social system which avoids conflict.

Given the past confusion of land transfers, loss of written records, and a common pattern of *hanai* individuals (who in several cases become key players) In the past, results in a situation where land issues in Kanaio are very localized. A worst-case scenario (based on several disputes) would have a contested piece of land being argued between the following parties:

A family who claims a direct genealogical link and by virtue of kinship holds traditional ownership of the land;

A family who has an indirect link by virtue of having purchased another family member's percentage (say 1/256) in the land;

A recent migrant *haole* who bought the land in good faith from individuals who claimed to be the legitimate owners and are members of the families above;

The State of Hawaii, who claims ownership by virtue of repossession of the land for non-payment of taxes, and as landlord has leased the land to `Ulupalakua Ranch;

`Ulupalakua Ranch, which has a long-term lease with the State of Hawaii to use the property fur cattle ranching, and has developed the road infrastructure.

All of these groups contesting the same parcel of land (field interviews).

One result of these complicated land disputes is that Hawaiian rights to land in Kanaio focus on familial claims, as the Hawaiian population in Kanaio without exception has at least some claim, however complicated, to property. This puts them in a different situation from many Hawaiians elsewhere who have no direct claim to specific parcels of land, and who are involved in complex disputes with Hawaiian Homes, the State of Hawaii and Federal bureaucracies for access and title to land. Nearby Kahikinui is an excellent example of the tensions inherent in the Hawaiian Home system of land allocation, but it appears to have had relatively little impact in Kanaio, where individuals and families struggle with some of the same bureaucracies in their own attempt to reacquire lands they controlled in the past.

Kanaio as Spiritual Center

To the Hawaiian community in Lower Kanaio the image of Kanaio as Spiritual Center is tied to the much-overused concept of *`aina* as discussed by Kame`eleihiwa (1992) among others. It also appears to be part of a more complex phenomenon relating to cultural control and customary practices as has been examined in some detail by French geographers and archaeologists in New Caledonia (Doumenge 1982, 1975, Frimigacci 1977). Doumenge noted that rural areas that before were seen as backwards and unassimilated have now become seen by Kanak as the key areas for reestablishing "coutume"(kastom). The absence of significant numbers of outsiders has made rural areas the center of Kanak identity, political and cultural revitalization. The formerly unattractive rural areas are now seen as the areas with the fullest expression of true Melanesian cultural personality (Doumenge 1982:320). While rural areas in Hawaii have yet to imbued with the complex political power seen in New Caledonia, the view of rural areas has definitely shifted from "backwater" to what often seems to be seen as a "cultural preserve" (Howard 1990, Linnekin 1990).

Within the Lower Kanaio community the relationship to place can be seen as a personalized emotional bond to place, mediated by links of ancestors to Kanaio. Genealogy is central both in defining place in Lower Kanaio and for providing a foundation for bonds to place. Within this context Kanaio is not as much a physical location in the present as a series of places going back through time, a Hawaiian corollary to Bonnemaison's (1985a) metaphor of the Tree, which link the living with an identifiable past stream of related individuals. Within Kanaio individuals who are part of the *`aina* are in part protected by the past and provided a secure and safe place for the future. The place becomes an active agent in protecting from threat and supporting for success, rather than a passive stage upon which people posture. The place is inseparable from the people, for they are of the place and have shaped it, and thus the visible present is as much an image of past generations as of physical forms. This is the basis of older patterns of kin-based land control. As the place is imbued with family and vice-versa, it also illustrates why the concept of land as commodity was so foreign to *maka`ainana* during the Monarchy and led to their disenfranchisement during and after the Mahele.

Kanaio as Ritual Place

Relationships to place in Lower Kanaio frequently go deeper than merely ties to ancestors in the sense of human progenitors. In some cases the link is more to the concept of *akua* or family-linked guardian spirits. However, it is difficult to ascertain just how common this belief is in contemporary Lower Kanaio. It is considered to directly enquire about this belief pattern because it is considered private rather than public knowledge. Counter to this is that with increasing interest in Hawaiian spirituality, especially in Kanaio with the influence of the Upper Kanaio community and its New Age ties (appendix III), has made most individuals in Kanaio sensitive to this issue, as it involves at some levels proprietary rights to beliefs based on ethnic identity (Churchill 1992).

The traditional belief system does appear to be in daily use with some families, as links to ancestors and signs given by *akua* (or possibly *`aumakua)* were frequently mentioned in the context of everyday affairs. The general consensus is that they are a normal part of existence in Kanaio, and as such provide the active, protective agent discussed under the concept of *`aina.*

Kanaio as Frontier

To most residents, Kanaio is very much the Frontier image. To the Lower Kanaio community the Frontier image is one of self-determination in social patterns and interaction, a power they value highly. The police, the major enforcers of normative behavior, who are very visible in Wailea-Kihei, Kula, and the other residential-tourism regions, generally avoid Kanaio unless on specific assignment. Situations which would elsewhere involve police are dealt with by residents in conjunction with `Ulupalakua Ranch, which provides the major stabilizing influence on the area.

This freedom of behavior is a major attraction to people in all sections of Kanaio and is a major reason for residence. As a result it is also one aspect that most fear losing with increased population and easier access (with road improvements). While the area is perceived as isolated, in reality most families daily commute to other sections of Maui, and children are bussed daily to schools in Kula, so the isolation is more a reflection of bureaucratic disinterest as much as any real physical difficulties. This conceptual isolation allows families in Lower Kanaio to operate in a mode much closer to their own views (which frequently diverge from one another) of appropriate behavior. Despite some disagreements, the patterns of social interaction in Kanaio run smoothly within a traditional Hawaiian concept of community now rare in Hawaii except for a few other isolated rural areas such as Keanae (Linnekin 1985).

As discussed earlier the area defined as Upper Kanaio consists largely of individuals who are not only relatively recent (first generation) migrants but appear to share a set of common beliefs (map 4.1). This group has been drawn to Kanaio based on these spiritual aspects. While the sentiment is common to most residents in Kanaio, the context and form of this spirituality is significantly different in many ways from that expressed by the Lower Kanaio population.

The first wave of these immigrants was a small group brought to Kanaio by its isolation, with the intent of using Kanaio as a meditative and social retreat in 1974-75 (appendix III). Their choice reflected the Frontier image discussed earlier in that it valued the social isolation Kanaio offered. They settled in the upper section of Kanaio, away both from the lower community which was also beginning to return to Kanaio, and the main highway (map 4.1).

This desire for isolation also led them to disperse their residences into three general areas, determined by land accessibility and a desire for privacy.

While this group came to Kanaio from different regions of the United States and Canada, they shared a common social philosophy and interest in metaphysical self-exploration. They had no genealogical links to the land in a way comparable to the members of the Lower Kanaio community, but rather felt themselves drawn or brought to Kanaio by spiritual forces. The initial development of the Upper Kanaio community was expressed through meditation and alternative religious movements. This was typical of the migration of individuals and groups to locations throughout Hawai`i in the middle of the 1970s, when Maui in particular (along with the North Shore of O`ahu and Hanalei on Kaua`i) became a popular mecca for individuals seeking spiritual change and bringing meaning to their existence.

While this movement has faded away in many areas, in east Maui it is still extremely popular and has developed into a highly visible and potent political, economic, and social force. From the 1970s to the 1990s the alternative lifestyle movement went through a series of evolutions which at present manifests itself as various permutations of the New Age movement (appendix III). Most Upper Kanaio residents still see themselves as heavily involved in spiritual self-discovery, though it appears to be more selectively individualistic and less group-based than in the middle of the 1970s. Despite this individuality there is still a network of interested residents who provide mutual assistance in work and social activities. An interesting spatial factor that was noted during interviews was that frequently the social ties of individuals in Upper Kanaio are closer outside the Kanaio community than within it. Privacy is valued over social interaction in Upper Kanaio, which reflects the individual nature of the common belief system, and provides one of the main distinctions between the Upper Kanaio and Lower Kanaio communities.

The New Age phenomena in Kanaio is complex and varied enough to worth its own dissertation, but a few key aspects of the belief system as related by informants that illustrate this diversity appear in appendix III.

The key to the New Age Movement is the individual and individual discovery. A major concept is of personal transformation from a past which was mundane or unrewarding to a new and exciting future. A term frequently applied is that of "healing", which is also reflected in the emphasis on holistic healing. The title "New Age" comes from the belief that in the near future (usually around the turn of this century) this transformational experience will either occur or be triggered within the context of the general human population, a fact frequently brought up in interviews with Upper Kanaio residents. This supports the strong ecological bent of the movement, which sees the protection and preservation of the Earth Mother (or Gaia) until the general transformation occurs as a central value.

While the participants usually describe themselves as being on individual spiritual journeys, the New Age movement, with its value set and underlying philosophy, does fulfill the basic criteria of a religion. A unique aspect of the New Age movement is the willingness of members to appropriate rituals, beliefs and objects from other extant belief systems (appendix III). This appropriation of indigenous beliefs, ceremonies and ritual objects, while perceived by New Agers as supporting indigenous value systems, has been increasingly seen by many indigenous populations as just a new form of intellectual colonialism (Trask 1993, Churchill 1992), though the very limited interaction between Upper Kanaio and Lower Kanaio residents has minimalized the effects of this process. The isolation, and lack of knowledge about the operative belief system of the other community has resulted in a surprisingly lower level of tension over this issued.

A key element in the importance of Kanaio is based on a pan of the transformational process, the concept of Universal Power. As Melton notes:

> The power to bring about the transformation of individuals comes from universal energy. Members of the New Age Movement assume the existence of a basic energy that is different from the more recognized forms of energy (heat, light, gravity, etc.) which supports and permeates all existence. This energy goes by many names: prana, mana ... orgone energy ... ch`i, mind, and the healing force. It is the force believed to cause psychic healing. It is the force released in various forms of meditation and body therapies that energizes individuals mentally and physically. It is the force passed between individuals in the expression of love. It is the underlying reality of the universe encountered in mystical states of consciousness. (Melton 1990:xvi)

This is specifically seen on Maui in that a widely held New Age belief that Haleakala in general, and Kanaio in particular (along with Haleakala Crater) is seen as one of the major "Power Spots" on the planet. As Melton notes, power spots are a central concept within the New Age Movement:

> ...there is a belief that certain points on the Earth are believed to possess an excess of available spiritual energy. As such spots, for example, the practice of spiritual disciplines such as meditation and yoga are facilitated by the very environment. As points of intensified energy, these "power spots" intensify whatever people bring to them and can become a place of (often unexpected) transformation...
>
> Locations designated as power spots can be placed in three categories. The first, of which Mount Shasta in northern California is an example, are spots of strikingly beautiful and impressive natural scenery. Maui… are other examples in this category. Second, many ancient worship sites have been designated as power spots...
>
> The third category of sites are places which people in the psychic-New Age community have designated as power spots (for any number of reasons), a designation upon which others have later agreed. Such a spot is Sedona, Arizona...

...as with other themes inherited from the older psychic-occult community, the New Age Movement has added its own particular perspective to the understanding of power spots. They are seen as places of personal transformation and pilgrimages to them are seen as a tool of transformation. This perspective has made tours to power spots ... a popular activity for New Age groups. (Melton 1990:359-360)

Maui is advertised in New Age publications both as a tour and as a residential location, and groups of believers residing elsewhere on Maui visit Kanaio, especially the Buddhist Temple, on most weekends.

The New Age Movement, and New Age communities on Maui manifest the following values: strong concepts of individualism and freewill, somewhat selective environmental concerns and a strong desire for handmade or "traditionally produced" products. In marketable form the images have become attractive tourism and economic forces which play a very visible part of life on Maui, especially in Paia and Makawao. In the 1970s locations that became centers of the precursors of the -New Age movement were usually isolated, and in economic decline, and thus amenable to the explorations in alternative lifestyles that more economically successful communities, such as Kahului and Kihei.

To date no research has been done on the evolution of New Age communities in Hawai`i, but on Maui many areas which had been declining in population and commercial traffic prior to the 1970s experienced a significant economic revival with the influx of these new immigrants. While in many cases stay was temporary, the commercial and social opportunities led to the revival of communities such as Makawao, Paia, and Lahaina which grew in the 1980s and 1990s in part due to this new population. A subtle but important part of the contemporary tourism image of Maui is linked to the strong social and economic impact of this population, as can be seen in the large number of "alternative life-style" stores, holistic healing practitioners and others catering to this group.

A statement common both to Lower and Upper Kanaio residents is that:

Kanaio is a place that decides if you will stay. If you belong you can never really leave, and if you don't belong you will quickly be chased away (by the *mana* of the place). (field interview)

In the Lower Kanaio Hawaiian community this is couched in familial terms, combined with a pervasive belief that Kanaio is a place with a great deal of *mana*. To Lower Kanaio residents the place (Kanaio) is actually superorganic and actively dialogs with residents.

The Upper Kanaio haole community sees Kanaio in a subtlety different light -- Kanaio being a focal point of energy within the larger locus of Haleakala.

One individual interviewed noted that he has been in Kanaio for 3 years, and on Maui since 1982. Before he had ever traveled to Hawai`i he had very detailed dreams of Makena, Kanaio and `Ulupalakua. The dreams brought him to Maui. When he first arrived he tried staying in Kanaio, but it was too powerful and demanded too many changes from him, so after a few days he moved down to Makena where things were less intense. But over the years he has become more acclimated and now feels totally comfortable in Kanaio where he has been for the last 3 years.

He sees this whole section of east Maui, Honua`ula, as being the Center of the Earth Spirit. Maui is the mother, Kaho`olawe is the fetus, Haleakala is the breast, and La Perouse the nipple. There is a line of power marked by the line of cinder cones leading up to Haleakala crater--they are in a line from the spine of the fetus (Kaho`olawe) to the central Haleakala crater.

In his view, while Kanaio has power, this is because Kanaio is part of this line from Kaho`olawe to the central crater, so it also includes the `Ulupalakua Ranch area. (Field interview 6/25/92)

Shared with Lower Kanaio residents is the attitude that Kanaio (the place) chooses the individual rather than the individual choosing Kanaio. While this concept of power and place is shared by Upper Kanaio residents, in other aspects the individualistic nature of the New Age philosophy comes into play and a variety of different logics and interests are manifested by Upper Kanaio residents, as illustrated in appendix III.

The ritual heart of the Upper Kanaio community is the Buddhist monastery *mauka* of the eastern eucalyptus grove in Kanaio at the 2500 foot elevation (map 4.1). This cluster of structures, located in a small swale overlooking much of Kanaio, is linked to a rock outcrop which overlooks the site from just upslope. The temple, which was started in 1981 and formally completed in 1992 (appendix III), has developed into a focal point not as much for the Upper Kanaio community as for members of the New Age communities elsewhere on Maui, especially those in the Kula-Haiku region, who visit the grounds on a regular basis both as groups and individually.

Members of the Upper Kanaio community also view Kanaio as having links to external locations at more complex levels. The first is the Hopi-Hawaiian link, as manifested from the 1950s by Daddy Bray and later spiritual movements such as Hunaism and Foundation, both of which has undergone major growth in popularity since the 1970s (appendix III). The second, more diffuse link, is that relating Kanaio to the Bock Saga (appendix III).

Individuals in Kanaio do not see these diverse beliefs as being competitive, as every individual seems to pick and reinterpret beliefs in idiosyncratic fashion. The result is a community who on one hand share a common set of beliefs and values, and yet any two individuals will exhibit tremendous diversity, to the extent that genera1izing normative patterns can provide a misleading image of shared values arid beliefs. However, several common beliefs are present in Upper Kanaio:

Kanaio as a place of power, either specifically (i.e., Kanaio as locus), or a point on Haleakala;

An intellectual link to pre-contact Hawaiian beliefs, as interpreted by Daddy Bray-inspired movements such as Foundation and Hunaism;

Kanaio as a place of inward-looking, meditative or spiritual cleansing, a place to find oneself. It should be noted this is different (though not contradictory) to the first point as the power can only be given to those who are spiritually prepared to use it;

Kanaio needs human guardians for its environment, and those who have been chosen (i.e., the Upper Kanaio community) are responsible both to protect the place from destruction and nurture the land. Though expressed in the term *`aina* it is not synonymous with the concept as used by the Lower Kanaio community, as the familial-genealogical link to stewardship is absent or more

abstracted.

The Upper Kanaio and Lower Kanaio communities do not agree on how *`aina* should be expressed, for the *haoles* in Upper Kanaio feel this defines itself as minimum impact (the environmentalist stance), leaving the land as undisturbed as possible. This does not closely correspond with practices within the Hawaiian community in Lower Kanaio. All residents share two beliefs, the first being that Kanaio is spiritually unique. They also agree that Kanaio's uniqueness should be preserved.

The Ranching Community and Kanaio-A`uahi

Of the all the images which pervade Kanaio and A`uahi, the most pervasive is that of cattle ranching. This is not surprising, as cattle have been a major pan of the cash economy in Kanaio and A`uahi since the 1830s. In their success they were a major force in the destruction of the dry forest (Chapter 1), provided the major source of jobs since the late 1800s, and often provided the alternative residence when people left Kanaio (Youngblood 1986).

Many ranches in Hawaii traditionally (and still) provide residences for employees as one lure for otherwise physically demanding and low-paying jobs. By the late 1800s, cash alternatives in Kanaio almost nil and daily commuting by horse or foot was difficult to the nearest ranch-based community: `Ulupalakua Ranch to the west, Kahikinui and Kaupo Ranch to the east. In this period it was more logical to move to ranch housing and give up permanent residence in Kanaio. The nearest ranch (`Ulupalakua) was 3 miles away, and most commercial goods came from the ranch store, which further encouraged migration to the ranches. Given the changes in vegetation pattern and decreased water which occurred in the 19th century, the only viable economic option in Kanaio-A`uahi appeared to be in small scale ranching. However, pressures from the major ranches (especially `Ulupalakua Ranch) to consolidate pasture and open range squeezed out small operations. `Ulupalakua Ranch acquired the *ahupua`a* of A`uahi, along with leases to *mauka* Kanaio and much of *makai* (of the highway) Kanaio, which made small-scale ranching apparently unattractive, to the extent that by the 1950s only one independent ranching operation was functioning in Kanaio: the LLL Ranch, which is still in operation.

Ranching in Hawai`i has been a major factor in the development of the contemporary Hawaiian cultural landscape, especially in certain regions. East Maui is one of these, as large ranching operations (Kaupo Ranch, Haleakala Ranch, `Ulupalakua Ranch) still dominate the landscape from Keokea to Kaupo, and a number of smaller ones are scattered from Makawao to Kipahulu. While they have not always provided the dominant economic force to these areas, they controlled the majority of acreage, modified the landscape, and generated a set of values which still identify this section of Maui. Such events as the Makawao Rodeo have become major celebrations of this lifestyle, and communities such as Makawao and Pukalani now consciously market their *paniolo* (cowboy) heritage.

The glamorized image of the *paniolo* is the key ingredient: self-sufficiency, working off the land, close ties to the land and animals, along with a large measure of independence. This is the image of the Frontier, and as elsewhere in American society, it pervades attitudes throughout Kanaio and neighboring areas (Vale and Vale 1989, Choy 1976, Reid 1972). In Kanaio-A`uahi one reflection of this image is the near-daily discharging of firearms (though people here are generally careful with them). Having guns and using them for hunting (goats), recreation (target shooting) and warning away trespassers (protection) is still the norm.

With the traditional Hawaiian ties to land in the Lower Kanaio community, it is easy to see why the Frontier image is so attractive. Many families run a few cattle, horses are common, and hunting is pervasive. Values and attitudes of independence and self-reliance are strongly held throughout Kanaio. The ranching lifestyle has become an integral part of the Kanaio self-image. Ironically, as in Wyoming, Colorado and elsewhere, with population increase, conflicts reminiscent of the nineteenth century western Cattle Wars are occurring, as this open lifestyle starts to compete with new residents who want quiet, to plant crops and see grazing animals as trouble (Duncan 1993). While not yet a reality, this lifestyle may be on the way out in residential Kanaio as the population grows.

As elsewhere in the United States where the Frontier image dominates (Duncan 1993, Vale and Vale 1989), in Kanaio-A`uahi the `Ulupalakua and DePonte (LLL) Ranches have an importance beyond their presence as commercial operations. The cattle, the *paniolos*, the cattle trucks, the herding and moving of the cattle--all the operations that make up a working ranch provide a series of icons of the Frontier, of the values held so strongly in Kanaio. The ranching operations are a visible and dynamic reminder to residents of one of the main aspects that makes Kanaio attractive, its distance from the rest of Maui. In this section of Maui, tourism is merely lost rental-cars trying to get somewhere, while bureaucracies and complex commercial operations are somewhere else on the island. The ranches are visible proof of the independence which is so highly valued. While people complain about the control `Ulupalakua Ranch has over the region, or how the LLL cattle seem to wander places they aren't supposed to be, the loss of these two ranches would be a visible statement that Kanaio-A`uahi was no longer isolated and on the Frontier, the very image which made the area so attractive in the first place. Ranching in Kanaio is as much seen as business, as it is theater--the playing out of images which validate a value system which is so attractive that people stay in an area that otherwise lacks many of the amenities taken for granted elsewhere in Hawai`i.

Ranches and Kanaio

The ranches occupy a interesting niche in Kanaio and A`uahi, and the two ranching operations; `Ulupalakua Ranch, which is a major commercial venture and one of the largest ranches in the State (5th largest, with 5,000 head of cattle on 20,000 acres: Oliver 1993); and the DePonte's LLL Ranch (approximately 100 cattle and 101 acres), are vastly different operations both in scale and relations to the rest of the Kanaio community.

`Ulupalakua Ranch is a major social and economic force in East Maui. They have been involved in the development of tourism in Makena- Wailea (selling off land for development), they are a major money generator in their commercial operations, both in goods and salaries, and they control a large area to the west and east of `Ulupalakua proper. Almost half the improved pasturage and water round in the *ahupua`a* of Kanaio and A`uahi are the result of `Ulupalakua Ranch operations. The elementary school was in `Ulupalakua, as was the store. The ranch was both the locus of activities and the major force dictating events for the entire region. While the power of the ranch has lessened somewhat over the years, anyone in the area will think long and hard before they will get on the wrong side of the ranch. They are still the major player in this portion of Maui.

`Ulupalakua Ranch, by virtue of purchase and leasing from the State, is the major landlord in Kanaio-A`uahi, and in fact the contemporary Kanaio community is really a cluster of family-held land surrounded by `Ulupalakua Ranch-controlled land in every direction. Despite this power, the ranch goes to some effort to maintain cordial relationships with Kanaio residents, in part as

ranch operations are extremely vulnerable to sabotage, from simple vandalism to more serious cattle rustling. One result of recent inmigration to Kanaio and conflict over land control has been the Ranch's move out of lower and central Kanaio in an attempt to distance themselves from tensions in the community. As the Ranch's improved (and much better) pasture is in Kanaio above 3200 feet and upper A`uahi, neither of which has surfaced as contested lands, they have been so far successful in avoiding conflict. In many ways `Ulupalakua Ranch seems to have more in common with Kanaio residents than differences, as both parties share as the main adversaries the various bureaucracies, especially the County of Maui and the State of Hawaii. Both have agencies who desire to open up this section of Maui to residence and tourism. The Ranch, in common with most of the Kanaio community, is strongly opposed to this as it would be very detrimental to their operations and increase costs to the point that ranching would become prohibitively expensive.

The other ranching operation is the smaller DePonte LLL Ranch which works land in and immediately around the Kanaio community. The DePonte operation is unusual in that it is a commuter ranch, for the DePonte family live in Kula and commute out to Kanaio twice a day to work the ranch, over 25 miles each way on narrow roads. This operation was started by the present owner's father, who began to buy up land in the 1950s from residents moving out to other areas and selling their shares in land (field interviews 1992).

The LLL Ranch operation is located in Kanaio with the main corral and work area at the intersection of the Highway and the upper Kanaio road (map 4.1). This means that the LLL Ranch is a visibly central part of daily activity in Kanaio, both by virtue of the location of the corral and also the use of pasture land scattered throughout Kanaio. One side effect has been that some residents in Lower Kanaio have purchased cattle, but often let them run loose, assuming that they will either find sufficient feed or that their cattle will just take advantage of the LLL feed troughs. As Mr. DePonte pointed out, when there were only a few residents with "spare" cattle it was not too big of a strain for him to provide the extra food, but with the steady increase both in residents (which cuts off former pasturage areas) and an ever-increasing number of cattle being let "loose" the result is that he is caring for upwards of 20-30 more cattle than he owns, for no profit or gain (field interviews 1992). This overstressing of the traditional system of *kokua* or balanced reciprocity is not limited to Kanaio, but since the community does not have any recognized system of social control the likely result will be that the LLL Ranch will refuse to support any other cattle than their own. This will trigger bad feelings both between residents towards individuals who were responsible for the spare cattle for pushing him too far, and also resentment towards the LLL Ranch for halting what has become for some an accepted practice.

The LLL operation is in the same quandary as the larger `Ulupalakua Ranch--the operation is intended to be a profit-making enterprise, especially given that the owner must travel long distances daily just to maintain the operation. But on the other hand a disgruntled individual or family could easily sabotage operations, especially as much of the area is open range and the owner lives some distance away. As the population continues to increase in Kanaio, and the demands for residential space and room to run familial cattle encroach on existing pasture, it is likely that the LLL operation, like `Ulupalakua Ranch, may be forced to look elsewhere to conduct operations. Ironically this would affect the families at present running cattle he cares for the most, as they would suddenly find themselves having to deal with all the ranching chores, such as shots, food, water, and veterinary care that the LLL operation now provides. Given the general lack of experience with cattle among other families, if the LLL Ranch leaves Kanaio, it may signal the end of cattle as a major form of cash or food in Kanaio for the first time in over 150 years.

A more subtle impact of ranching activities is in land stewardship. Ranching operations by definition depend on the land to provide sustenance for the livestock, and in modem Hawai`i this means on limited acreage. The ranches are among the most sensitive to changes in land use patterns, especially those which directly modify the physical landscape that is presently supporting livestock.

The relationship of the ranches to the land is complex and has changed over time. Cattle and goats were the major destructive force on the traditional cultural landscape in Kanaio and A`uahi. They devastated the traditional forest and drove away the dryland agriculturalists by widespread crop devastation (Chapter 1). This resulted in a number of visible changes to the landscape, not the least of which was the destruction of many pre-contact structures, which were robbed of stone material to build cattle boundary walls which criss-cross both *ahupua`a*. These were intended both to keep cattle in, protect pasture, define property boundaries, and keep came away from the few remaining planting areas. The introduction of ranching to Kanaio and A`uahi led to pervasive changes to the landscape. However, since the 1880s, with outmigration, and only limited land use alternatives, ranching became a form of status quo with the modified landscape. The only major change was to improved pasturage, where land clearing was done to enhance the free movement of cattle, combined with the construction of water and feed stations. This produced the bucolic landscape which so dominates the upper elevations alongside the highway and *mauka* in this part of Maui. The seeding of pasture grasses in the area to improve the pasturage has resulted in a carpet of verdant green, on smoothly sloped cinder cones and up the side of Haleakala. This landscape, which dominates from Keokea to Lualailua Hills (at least above 3000 feet) has become the major visual image for this region (Kepler 1987, Youngblood 1983)(plates 1.1, 1.5, 1.6).

This improved pasturage is used as an example of the positive effect of ranching on the landscape, as it is seen as beautifying a dry wasteland. While this is not supported by either the archaeological or historical evidence (Chapter 3), it certainly is a striking contrast to view the verdant upper slopes and then the lower, dry unimproved areas of bare *`a`a,* with occasional *kipuka* of *haole koa* and *wi/iwi/i* (plates 1.6,4.1).

Ranching activities have another component that is difficult to analyze. This is the relationship the ranching activities have with the huge numbers of goats in the area. Unlike the cattle, the goats are not owned in the sense of branded or herded. Instead, goat ownership is based on their presence within the ranch boundaries. At present it is impossible to accurately estimate the total number of goats in the area, but their impact in both Kanaio and A`uahi is devastating on the flora. I noted during field surveys that in a single day I would cross paths with up to three different goat herds, each with a minimum of thirty to fifty animals, within one small section of lower Kanaio. This works out to a minimum of approximately 400 to 600 goats in lower Kanaio, and roughly the same for lower A`uahi. Given that the lower elevations are more limited in vegetation and water, the numbers should be significantly higher in upper Kanaio-A`uahi. This results in a minimum of 2500 goats within the two *ahupua`a*.

While this estimate seems overly inflated for such a limited environment, especially given the low numbers of cattle, the recent removal of the Perreira operations from Kahikinui supports the accuracy of this estimate. As the Perreira operations left Kahikinui they collected not only their cattle, but rounded up all the goats they could catch, and were moving out hundreds at a time from Kahikinui, an area which is in some ways even more limited than Kanaio-A`uahi (personal comm.). This estimate becomes even more

staggering when you realize that goats in this area, especially lower Kanaio, are constantly hunted by residents, outside hunters, and sophisticated helicopter-run operations conducted by `Ulupalakua Ranch, so goat herds are being constantly culled. Nonetheless, as Kaho`olawe has shown, goats are the major force for the desolate landscape seen in sections not improved for pasturage, and they directly compete in the improved sections. But ranchers are ambivalent about the goats, as they require no maintenance or care, and yet they can provide considerable profit. In 1992 goats caught in this area could be sold in Wailuku for $180.00 a head, or shipped to O`ahu for sale, would net between $200-250.00 a head (personal comm.). Given the lack of upkeep, the ranches can make considerable profit off the goat herds. But there are two paradoxes to this profit:

How many extra head of cattle could be maintained if they did not have to compete with the goats?

How does this balance with the concept of land stewardship the ranches hold so strongly to as part of their value system?

The goats devastate the land, destroying much of what the ranches say they want to preserve. While they are not responsible for the goats presence, the ranches' economic interest in the goats puts them in an anomalous position towards goat eradication and control. With the development of the State's dryland forest reserve in Kanaio this is liable to become a much bigger issue in the future.

The Outsiders: The Bureaucracies and the Empty Quarter

Almost without exception, Kanaio residents express more concern about increasing outside interest in Kanaio than any other issue. It is this concern which has mobilized the community in reaction to the proposed geothermal powerline planned to run alongside the Highway, an event which to outsiders would seem a cause to celebrate. It would result in accessible power, better roads, a more developed infrastructure, and likely increase local job opportunities. However the community is opposed and afraid.

Kanaio-A`uahi is an area which has never been comfortable with bureaucracies, whether it be Kamehameha I's *ali`i* (Chapter 3), the State of Hawaii as absentee landlord, or Maui County pushing development and enforcing regulations such as building codes. The major reason people move to Kanaio-A`uahi is to "get away," which frequently translates to get away from a surfeit of controlling bureaucracies. The whole image of the Frontier is based on the lack of bureaucratic control. Yet the power of these bureaucracies to institute change regardless of local desires is tremendous, and events within the last thirty years just to the west in Kihei-Makena, and also in Kula, provide evidence to fuel these fears.

Tourism in Southeast Maui

The key industry in late twentieth century Hawaii is tourism. Maui has become one of the islands most heavily affected by tourism and tourist development, both directly in resort tourist destinations but also more subtlety in the images of Maui which have been generated by tourism. Southeast Maui, especially the section from Kihei to Wailea, has become a major area of development (map 1.1).

Makena- Wailea is west of Kanaio and until the early 1970s was the end of the road from the small resort community of Kihei. As Kihei began to develop as a tourist destination, especially with time-share condominium developments, interest in expanding the tourism base to more hotels, golf courses and better access to the beaches in Makena led to County rezoning to the area (Farrell 1982). Despite vocal opposition from the Makena community, many of whom were living in Makena because, like Kanaio, it was isolated (Farrell 1982), the developments began. Farrell's study of development of the Kihei-Makena coast in the early 19805 (Farrell 1982) is a classic example of the results of poor planning and lack of interest in local concerns. The only interest of County and State agencies was in the increased tourism revenues and short-term gains that could be realized from developing this section of Maui. Farrell made a series of recommendations based on the failures in the planning process at Kihei-Makena. These included: detailed planning based on controlled growth; more community-based planning; and less tourism-based development (Hamilton 1994, Kubota 1993, Tanji 1993a). One reason these changes were necessary was due to the unplanned-for large scale inmigration to the area by individuals from the mainland United States, in search of the jobs generated by the growth in the tourist sector of the economy with these developments.

Instead of the controlled growth Farrell had hoped would result, with his recommendations ignored the situation in Makena-Wailea has gone completely out of control. In 1993, exclusive 2 bedroom, 2 bath condominium units at the Wailea Point were selling from $749,000 to $1,555,000, and similar units at the Makena Surf for $1,150,000. These prices were in some cases lower than prices in 1990 when the investment market was stronger, and when units at Wailea Point sold at $2,300,000 (2 bedroom, 3 bath) and Polo Beach dub 2 bedroom, 2 bath condominium units went for $1,200,000 to $1,650,000. The costs are so high as to almost have an air of unreality about them till one examines the general sales statistics for Maui (see table 4.1).

Hotels in this area have recently opened at tremendous cost (the Hyatt Wailea at a reported cost of 740 million dollars) (field interview 1992) just to find that the tourism market had slumped, and so they faced bankruptcy or receivership without ever becoming fully operational. Even with increased tourist numbers in 1993 the hotels were nowhere near capacity (Tanji 1993b, 1992).

As can be seen in table 4.1 the costs of land are incredibly high and the taxes alone are more than many low-income families can afford to pay. This drives out long-time residents, who find even if they own land outright they can not afford to keep it. But if they sell (even at considerable profit), they find everywhere else on Maui is equally expensive and equally as foreign.

Many Kanaio residents fear that Kihei-Makena pattern of resort hotels and time-share condominiums is Kanaio's future. But the bigger danger from development is likely to be in the pattern of estate development seen in Kula. Development in Kula was the result of intentional design changes in County zoning regulations. Demand for upscale private neighborhoods in the upcountry (Kula) side of Haleakala, and the promise of increased tax revenues for State and County governments, led to zoning changes which allow agricultural zoning to be retained if lots are at least 3 acres in size and some form of agricultural production is pursued.

TABLE 4.1

REAL ESTATE VALUES FOR MAUI AS OF 7/31/94 (Maui Board of Realtors: 1994)

Single-Family [Home] Median Prices by Area for Month ending 7/31/94 [selected areas]

Location	Current Month	Last Month	Year-~o Month
Wailea-Makena	0	$685,000	475,000
Pukalani	252,000	290,000	232,000
Maui Meadows	520,000	480,000	513,000
Kula/Ulupalakua/Kanaio	480,000	355,000	0
Kihei	259,000	295,000	252,000

Land Median Prices by Area for Quarter Ending 9/30/94 [selected areas]

Location	Current Qtr.	Last Qtr.	Year-ago Qtr.
Wailea-Makena	310,000	224,000	275,000
Pukalani	0	182,000	143,000
Maui Meadows	210,000	384,000	0
Kula/Ulupalakua/Kanaio	227,000	237,000	189,000
Kihei	340,000	125,000	0

Land Year-to-date Resale 1/1/94-7/31/94 to 1/1/93-7/31/93 [selected areas]

Location	Current yr.	Year ago	Aver. price This Year	Aver. Last
Hana	5	2	159,000	
Kihei	3	2	189,000	
Kula/Ulupalakua/Kanaio	13	2	381,000	
Pukalani	4	7	153,000	
Wailea/Makena	4	3	278,000	
All (summary)	89	61	304,000	
For Condominiums [selected areas]				
Kihei	110	101	155,000	
Wailea/Makena	43	35	433,000	

This allows developers to avoid zoning changes, which involve public hearings and input. It also puts residents of such developments in a much lower tax bracket as their lot is zoned for agricultural use rather than residential or commercial. The cost of real estate in Kula, along with the moratorium on increased water usage for the area, means that even illegal crops would show a loss rather than profit (Tanji 1991). However, the intent was to develop gentrified "country estates," which has been very successful, with a number of expensive estate projects in place or planned in Kula, including such projects as Kula 200, Kula Estates and numerous individual developments. An example of a typical home:

Kula Custom 4 Bedroom 3 Bath home ... gourmet kitchen, 3 lavarock fireplaces, master suite with jacuzzi, 3 car garage. Covered and lighted riding area: 12 horse stalls, 6+ acres. $1,950,000. (Maui Board of Realtors: 1990)

Though down slope in the Maui Meadows sub-division (in Makena- Wailea), this description provides the best illustration of the clientele desired in such developments:

Maui Meadows elevated 1/2 acre with outstanding, panoramic view. 5 Bedroom, 4 Bath Home, nearly new and separate 2 Bedroom Guest Cottage. Adjacent to other quality homes. Live Above and Beyond. FS $1,250,000 (Maui Board of Realtors: 1990)

From table 4.1 it is obvious that such projects are very expensive and highly exclusive: in 1993, lots in Kula 200 sell for $395,000 for-2.17 acres; a home in Kula 200 (7 bedroom, 7 bath, 2 acres) for $890,000; other land nearby goes for $293,000 to $525,000 for two to three acres (Maui Board of Realtors 1990). Many of the homes constructed fall into the million dollar category.

Many of these projects have architectural codes- not for safety restrictions but for esthetic reasons to ensure that new residents will build in a style suitable to the upscale nature of the community. They are frequently set up as closed communities, often with gated access and private security. This offers a marked contrast to the older, rural agricultural-small ranch lifestyle typical of old Kula, many of which have been forced to sell and move elsewhere, given the tremendous increase in taxes and declining relative profitability of commercial operations. The impact of this form of development has spread throughout east Maui, with homes in Keokea (for a 4 bedroom, 2 1/2 bath home, 3.4 acres) selling for $795,000, and more ominously, 236 acres of pasture land in Kipahulu (between Kaupo and Hana) going for $3,400,000 (Maui Board of Realtors: 1990).

At the time these zoning regulations were modified, the argument was that these changes would encourage small-scale agricultural enterprises. The result has been the opposite--the traditional population is being forced out by a variation on the part-time resident vacation home concept. In some ways these developments become visible parodies of former land use patterns in Kula, as the zoning requires that some rural business operation must be attempted, but it does not have to be successful nor actively pursued. In many estates it is common to see a small section of very sophisticated landscaping set aside for a small grove of macadamia nut trees, or pasturage with several expensive horses. Given the price of the land, house and landscaping, the profits off the "commercial operation" would be hard-pressed to even pay the cost of retaining a commercial landscaping firm to maintain the yard. In fact for tax purposes a "failing" business can be very useful, which further discourages serious small business development.

This pattern of land development is a very real threat to Kanaio-A`uahi. The main highway is being improved and widened, resulting in an ever-increasing flood of tourists who take the road around to Hana. As access becomes easier the area is becoming more familiar to people interested in new development opportunities. As the zoning regulations allow this type of development in areas otherwise protected from commercial development, for to develop this type of project the developer is not seeking a change in use or zoning, so public hearings are not required. Such developments are expanding into Kipahulu to the east, and Keokea to the west. Kanaio and A`uahi, which are only marginal to alternative commercial activities such as ranching, could become extremely valuable pieces of real estate. The area is already being test marketed--an area isolated from the hubbub of normal tourist locations, yet still convenient to urban centers. Recently a three acre lot near Waiakapuhi on the coast, inaccessible to wheeled vehicles (though it is on the Pi`ilani trail system), has been placed on the market carrying a $3,000,000 price tag (personal comm.). Access will be by helicopter. This is an ominous portent that the development patterns which plague Kihei-Makena, Kula, and now Hana (Hamilton 1994) are beginning to directly affect Kanaio.

Tourist imagery and Kanaio-A`uahi

The images that people use when discussing tourism-based development in East Maui are based on the developments which now blanket the coast of Maui from Kihei to Makena. Residents in Kanaio frequently mention the Kihei-Makena area when expressing their fears, especially in the forms that tourist development might take in Kanaio-A`uahi. Not only have the changes down in Kihei-Makena all been in just the last 20 years, but the scale and lack of control or direction over the development shocks most residents.

Kanaio residents have been especially sensitive to these changes, not only because of their close proximity to Makena, but because many Lower Kanaio families have relatives who used to live in Makena. These kinship links and their first-hand view of the economic and social life for Maui residents by the Kihei-Makena development has been an education and a warning for most Kanaio residents.

The tourist industry, in promoting Kihei-Makena, has developed a set of stereotypic images of the "Hawaiian Paradise" to make attractive a section of the coast that prior to tourist development, had been considered to be of limited beauty and value (by other than its residents).

For this reason the images used to portray Kihei-Makena and encourage tourists to visit are of interest as they reflect the attitudes and values both of the tourist industry towards appropriate resort settings, and also the perceptions of tourists towards undeveloped areas such as Kanaio-A`uahi.

Tourism literature is designed to support a set of preexisting images of an idealized place, to develop enticing views of a paradise that the tourist must see and experience. Frequently the writing collapses to the level of purple prose, but it is nonetheless effective. An excellent example is seen below, left largely intact to illustrate how the sequence of images is structured to entice the visitor to Maui. This imagery reflects views held both by the private sector and the Hawaii Visitor's Bureau (a branch of the State Department of Business, Economic Development and Tourism) of what tourists want and are interested in.

General terrain patterns. Note open country.
Central Kanaio at site 121 (New Age Site) looking towards A'uahi.

4.1 The Specific. A collapsed lava tube with dense banana. This *kīpuka* is located in the upper left of the upper photo.

Contested lands between the Uwekoolani's and the State.
East Kanaio from the highway looking to the west.

4.2 Contested land. Access point to the land in east Kanaio looking *mauka*.

[Discussing the Makena-Wailea area] There is a spirit about this part of Maui that inspires what some call illusion, and what others call a gift. It is here that the road trails off into wilderness and Maui reverts to its wild and free self, where the hills are tawny, thorny and unyielding, and the black lava coast surrenders begrudgingly to the jubilant cobalt sea [Kaloi-Kanaio, plate 4.5].

It is in complete contrast to the portion of the land tended by people and designated as a resort. The Wailea and Makena resorts are an incongruous emerald green, manicured to perfection, bursting at the borders in bright flowers, contoured into three golf courses with two more on the way, and studded with a few select hotels and vacation villages [plate 4.4].

Wailea claims 1,500 acres of prime real estate cradled between the massive slopes of Mount Haleakala and an ocean shimmering in the shades of a peacock's feather. A mile-and-a-half of shoreline is notched into five perfect crescent beaches, fringed in palms and splashed by gentle surf...

The Grand Hyatt Wailea Resort and Spa changed the tempo, kicking in to the tune of $600 million. With 787 rooms, $30 million of original an, a display of 10,000 flowers in the lobby, a European-style spa, a state-of-the-tot children's camp, a beachfront wedding chapel and a $15 million swimming pool complex, the hotel was bound to make a splash [plate 4.3, figure 4.2].

Swimmers may ride Hyatt's very own white-water river with spills, thrills and an illusion of risk--but the rocks are rubber and the current carefully controlled. At the end of the unusual pool is a water elevator, conceptually along the lines of the locks of the Panama Canal, to lift bathers to the top of the pool again...

The newest hotel on the Wailea scene is Kea Lani, which means white heaven. The architecture is distinctive, with turrets, domes, arches. Everything is dazzling white. Even the guest rooms are white upon white upon white. The only re~ color comes from the bright blue sea, the banks of bougainvillaea spilling from balconies, and the magnificent collection of hibiscus, flowers as big as dinner plates in hot pink, neon orange, fire engine red.

From the road, Kea Lani looks totally out of place. It should be in Morocco, not Maui, but once you are within its portals, the hotel seduces completely [plate 4.3]. It is opulent without being overwhelming, the white is cool, the arches channel breezes. Every room is a suite with a large lanai. The main pool area is a fantasy with a slide, bridges and a swim-up bar. A quieter adults-only pool is huge and studded with tiles that glitter like blue diamonds.

Beyond the glamour of its grand hotels, Wailea is a completely planned resort community, with single-family residences, vacation condominiums, historic Hawaiian sites, quiet beaches, a shopping complex and a full schedule of activity options.

The resort's two championship golf courses... are almost legendary in golf circles. A third course... is scheduled to open in 1994.

Tennis, too, is a headliner sport at Wailea. In fact, the resort has been called "Wimbleton West." In the 14-coun tennis complex, there are three championship grass courts and a tournament stadium that seats 1,000 cheering spectators...

With five beautiful beaches, the ocean action is almost endless... The waters are clear, perfect for snorkeling, and the reef areas abound in colorful tropical fish...

Sharing this sunny, dry end of Maui is the resort of Makena. Space and freedom are almost sacramental at Makena...

The Maui Prince is an oasis of civilization poised at the very edge of the Maui wilderness...

The landscaped grounds primarily reflect the bounty of the tropics. However, one quiet pocket is a complete contrast to the Hawaiian exuberance. A formal Japanese garden with sand, stone and carefully chosen plants invites meditation.

In the evening, music emanates from the open atrium of the hotel, drifting upward to all the floors. It might be Mozart. It might be "Amazing Grace," an aria or Broadway medley, but it adds a grace note to the scene, as the sun sinks, coloring the sky cerise.

Makena, too, offers great golf. The 18-hole championship course... Another 18 holes... will be completed this year...

Makena's beach is a quarter-mile smile of gleaming sand freshened by breezes and fringed in palms.

Put the two neighboring resorts together, Wailea and Makena, and what you get is a fabulous Fun Coast that is often called Hawaii's Golf Coast.

The two resorts share the grandeur of this end of Maui, the space, the freedom and beauty...

Makena Stables takes riders exploring the slopes of Haleakala, through the volcanic meadows of historic `Ulupalakua Ranch to Hawaii's only commercial winery, Tedeschi Vineyards...

Rose Ranch is now `Ulupalakua Ranch and has retreated upland, leaving the shore free for fun seekers.

Just past the resort area, where the road gets rugged and nothing is tamed... (Ariyoshi 1993:47-49)[plates 4.2, 4.5]

A survey conducted by a tourist industry publication also validates how central these images and symbols are to the tourist experience:

60% of the tourists surveyed were on their first visit to Maui;

The most common activities were attending luau, snorkel cruises, land tours or water recreation;

64% visited at least one art gallery;

98% said that they will return to Maui, and possibly even more significantly 28% said they were planning to move to Maui;

The top five positive points they had for Maui were the beautiful scenery, the climate, the ocean, the friendliness of the residents and the snorkeling opportunities. The top five complaints were the scale of commercialization/development, the high prices, the traffic, the difficulties of renting a car and the road conditions. (Anon 1991:27)

The images noted above provide a basis for contrast to those perceived by non-residents when viewing Kanaio-A`uahi. In the tourist literature East Maui has two diametrically opposed images: one of Hana, Kipahulu and related features, the classical image of wet, tropical, Polynesian Hawaii; the second, the cosmopolitan, sophisticated Makena-Wailea image seen above. These two images dominate the tourist industry view of east Maui. In over 30 picture books, tourist brochures and travel guides about Maui, not a single picture of Kanaio-A`uahi was noted. While `Ulupalakua Ranch has become a minor tourist location both by virtue of its picturesque surroundings and the presence of the Tedeschi Winery, it is frequently described as "the end of the road" till one reaches Kaupo (or more accurately Kipahulu). The area between is

... many miles of "washboard din," passing through free-ranging cattle country, is desert-like (in places reminiscent of southeast

The Grand Hyatt Wailea.

4.3 The Images of Tourism: the Kea Lani at Wailea.
Note the pseudo-Moorish architectural cues.

Tropical landscaping at Wailea. Note the use of exotic palm species and moving water to create an oasis effect.

4.4 Tourist Images of southeast Maui: A golfcourse at Wailea.

Central A'uahi towards Kanaio on the main highway.

4.5 Contrasts of Tourism and Kanaio: An enclosure (site 628) above Pu'u Pimo'e at 1600 foot elevation.

Arizona) and virtually uninhabited. Traffic is sparse, there are no emergency telephones, no water, and the nearest mechanic is in Kula, many lonely miles distant. If your axle breaks or you run out of gasoline, it may well be the next morning before you can hope for help. (Kepler 1987:73)

The image of the Frontier again appears, but in the tourist context it is as an area to avoid and fear. The highway's elevation and substantial distance from the coast as it passes through Kanaio-A`uahi, combined with the recent *`a`a* flows and unusual and sparse vegetation (largely *wiliwili* groves) does not fit either of the images developed by the media for East Maui (plate 4.5). The result is that Kanaio-A`uahi is an area of risk sandwiched between the lush tropical images of Hana and the oasis image of Wailea (plates 4.3, 4.4).

Yet in many ways Kanaio-A`uahi contains the physical attributes that have made other successful tourist destinations in Hawai`i. It has the same attractions of scenic view, good climate, constant winds, and a high number of sunny days. Beaches are nonexistent, but then beaches are largely absent on the Big Island's Kona "Gold Coast" and that has not slowed development. As pessimistic as Farrell's (1982) predictions appeared at the time in the early 1980s, he would be shocked at how optimistic his predictions turned out to be versus the reality of the middle 1990s.

A key aspect of tourism icons in the Makena-Wailea developments is the lack of any contextual relationship with either the past or contemporary cultural landscapes of the region. This can be seen most dearly in the earlier quote describing the "flagship developments" for Wailea and Makena. Of interest is the oasis image, which of course requires a wild, untamed and hostile landscape beyond the hotel (Kalo`i-Kanaio), with the hotel the sanctuary of comfort and culture. The ride to Hana thus becomes an adventurous expedition rather than a simple sight-seeing trip. But the oasis image also acts as a means of segregation between the residents in places like Kanaio and the tourist-no positive values or images are presented for Kanaio-A`uahi:

... road trails off into wilderness and Maui reverts to its wild and free self, where the hills are tawny, thorny and unyielding, and the black lava coast surrenders begrudgingly to a jubilant cobalt sea." (Ariyoshi 1993:47)

This shifts residents in Kanaio from the level of the Frontier (a positive and romantic image) to that of marginal inhabitants of the Empty Quarter, the wasteland one transits to more attractive locations. This devalues both the place and the people. Ironically this may be the single major factor which can preserve Kanaio-A`uahi from immediate development. The image of the Empty Quarter makes Kanaio-A`uahi unattractive to developers, especially the more pervasive, small, upscale estate forms found in Kula, which have capitalized on the Frontier image as a major selling point. While land costs are lower in Kanaio, the lack of developed infrastructure and perception of a harsh, unattractive environment will make resort homes a hard sell.

The State of Hawaii and the Empty Quarter

The dialog between State agencies and Kanaio residents has not been a happy one. Several issues have resulted in friction, the first being that of legal claims to land, which is also tied to appropriate taxation. The second is the State view of its obligation as steward to the public interests, representing the People of Hawaii in contrast to the needs and interests of Kanaio residents. The third is the State's desire to increase revenues and increase job opportunities, especially in the area of tourism, which has been formally espoused as the only viable area for economic development in Hawai`i (Tanji 1993b, Huetz de Lemps 1989, Farrell 1982). The last area of contention is the State's responsibility to provide infrastructure needs, both in terms of energy (the Geothermal Project), road, and water development, all of which are strongly supported by the tourist and development interests and opposed by a majority of Kanaio residents.

It is worth noting that in Hawai`i State bureaucracies are highly centralized and almost exclusively housed in Honolulu. Almost all State business is conducted in Honolulu, and effectively all decisions are made in Honolulu. No evidence was found to indicate that any major State decision-maker, on any issue impacting Kanaio, have ever traveled to the area. The situation is very much one of "remote control," a sore point historically with all the other islands. There is a very strong attitude of being outside the decision-making process, and it is not by accident that on O`ahu, the other islands are called the "Neighbor" islands or the "Outer" islands. In terms of power and decision-making the second title is certainly accurate. To State decision-makers and planners in Honolulu, Kanaio-A`uahi is part of the Empty Quarter, a place without a visible constituency. It is symptomatic that one of the largest contiguous Hawaiian Homes parcels in the State is found bordering these *ahupua`a* in Kahikinui (22,000 acres), as Hawaiian Homes land is traditionally in areas of limited economic interest.

The Uwekoolanis and the Homestead Issue

The State (and to a lesser extent County) bureaucracies take their stewardship of the land in this area lightly as long as it is not threatened, which is only to be expected within the image of the Empty Quarter, as the land proper is seen as having little if any real value. The State is the largest landowner in Kanaio, though as has been mentioned earlier title to some of this land is contested with past and present residents. However, a recent challenge to the State's control over the land came when a member of the Uwekoolani family, returning to Kanaio from years living on the mainland , decided to move onto land within the eastern section of the Kanaio Homesteads (map 1.2, plate 4.2) in a parcel formerly owned by relatives. Without awaiting resolution of the legal challenges, he proceeded to move "back" on the land, which the State insisted had been repossessed for non-payment of taxes many years earlier. As in most Homestead parcels the ownership issue is clouded by confusion and poor records. In the State's view the land was leased to `Ulupalakua Ranch as pan of their general lease of most open land in Kanaio. However, the Ranch refused to get embroiled in the dispute.

As part of the open lease, this section of east Kanaio was not fenced, largely because there were so few cattle in the area, as this Homestead parcel is located on top of the 1760 flow, and consists of very rough *`a`a* lava with a few small *kipuka* with good soil. Despite the lack of cattle, a number of goats and some pigs roam at will through the property. As the Uwekoolanis moved on to the property, they bulldozed an access road and started to fence in areas for pasture (plate 4.2). A small garden was started, and intensive hunting of the goats and pigs began. Alarmed by the permanent nature of the settlement, the State moved to protect its primary

landowner status, and took the family to court. This had been anticipated by the Uwekoolanis, who assumed that the issue would be resolved on legal claims to the land. However, the State took another tack, and instead declared a section of the Homesteads to be a Natural Area Reserve to preserve endangered dry forest species. This reserve just happened to include the pared claimed by the Uwekoolani family.

At one level the State's move was legitimate, as Kanaio-A`uahi does contain the largest extent remnant dry forest in the state, though this is actually in A`uahi, while the Reserve is in Kanaio (Chapter 1). However upon closer examination, the State's argument appears specious for two reasons. The first is the lack of any protection or concern displayed by the State Department of Land and Natural Resources prior to the Uwekoolani resettlement attempt. The area was given over to pasture lease, and the Department apparently had no problem in the past with the widespread devastation by grazing animals, especially the goats, which roamed uncontrolled throughout the area. This despite repeated warnings by botanists at both Federal and County levels about the need to preserve the area.

The second flaw in the State's argument is the timing between the development of environmental concern and the Uwekoolanis interest in using the parcel. In many ways the movement of the Uwekoolanis into the eastern Homesteads, their fencing and hunting of goat · and pig, was the first action taken by anyone in the last 100 years to protect the endangered plants, though it was not altogether altruistic.

The decision to make the area into the Kanaio Nature Area Reserve provides yet another example both of the concept of the Empty Quarter and the distance between decision-makers and involved parties (Murphy 1993). Notable is the inclusion of a section of land which was not of interest to professional botanists (in particular the same ones who had lobbied unsuccessfully in the past for protection of this area), based on input from the Nature Conservancy rather than any viable data. According to the "Process fur Designation of Natural Area Reserves" provided by Department of Land and Natural Resources, Forestry Division:

> There are currently 19 Natural Area Reserves protecting approximately 110,000 acres of Hawaii's most valuable natural heritage. The first, Ahihi-Kinau on Maui was designated in 1973; the latest, Kanaio, also on the island of Maui, was designated in 1991. (Forestry Division:1)

The procedure reflects the distance between the agency and Kanaio residents. There is a Natural Area Reserves Commission which acts as an advisory group to the Board of Land and Natural Resources, which makes the final determination. This is then sent on to the Governor, who signs the reserve into existence with an Executive Order. The process begins with nominations made to the Natural Area Reserves Commission at public meetings. Then:

> 3. Staff refine the nomination and prepare it for public hearing on the island where it is located. This may include an on-site visit to the proposed site.
> 4. A public hearing is held on the particular island, preceded by legal notification of newspapers and circulation of the nomination to interested parties.(Forestry Division: 3)

There is no evidence that an on-site visit was conducted during this process fur the Kanaio nomination. A key factor is that since the areas are considered to be on State property, there is no formal need to notify contesting parties, merely interested ones. Other than contesting the recommendation at the level of the Board of Land and Natural Resources, which would require substantial effort and preparation, this is the only public input required. While fulfilling the letter of the law, it allows interested parties (such as Nature Conservancy) to pursue agendas given their expertise in the political system which may not be readily available to other parties such as the Uwekoolani family. Unfortunately, once the Reserve's boundaries have been signed into Executive Order, despite their suspect nature, they can only be changed by:

> 8. Any changes to a Reserve, such as re-designation or modification of established boundaries also requires a public hearing process before any significant action is taken. (Forestry Division: 3)

This would obviously require expert botanical witnesses, lawyers, and money, not to mention constant trips to Honolulu. When one examines the criteria for inclusion described below, the inclusion of the contested parcel becomes even more suspicious:

> Scientific Value: Each Natural Area shall have significant potential for scientific study, for teaching, for preservation of distinctive biota or other natural features, or for preserving natural genetic material. The description of a proposed area shall include details of the scientific attributes of the area.
> Administrative: Each Natural Area shall be identifiable on maps and on the ground. It should be reasonably protectable from pests and from physical damage and, legally, from encroachment. Access to the area should be in conformance with the nature and purpose of the area...
> Size of Areas: Each Natural Area shall be large enough, but no larger than necessary, to accomplish the particular purpose of establishing that Natural Area. A desired size is that which will provide essentially unmodified conditions in the interior portion. The cost and feasibility of protecting the area will have a bearing on the size.
> Some areas may be less than an acre while others may exceed 10,000 acres, where a special need is demonstrated. (Forestry Division: 2)

The contested parcel does not appear to fulfill the criteria above, but the struggle to remove it from the Kanaio Natural Area Reserve would be cost prohibitive, as this still would not resolve the issue of the ownership of the parcel. The sudden invocation of environmental issues in this case appears to be a rather neat legal move to side-step the still unresolved issue of real land ownership, as any major long-term concern about the protection of an endangered habitat. This can be seen in the State's subsequent efforts to protect the area, which so far has been limited to several signs warning along the Highway warning against trespassing in the Kanaio Natural Area Reserve. As of mid-1993 no fences have been put up, nor has any eradication effort against the once-again uncontrolled

predation by goats been mounted, despite the inclusion of the area as a reserve in 1991. The situation is back to the former status quo, and the Empty Quarter has temporarily returned to silence.

The Implications of the Geothermal Powerline

It would appear to be somewhat of a puzzle as to why a State agency would react so strongly to a relatively minor squabble about a parcel in the Empty Quarter over which they apparently had little interest. But this story becomes more complicated, as a second agency was also interested in the same sections of Kanaio-A`uahi. The interest revolved around State plans to develop geothermal power plants on the Big Island and Maui, despite widespread vocal (and occasionally violent) opposition. The initial geothermal development was in the Puna section of the Big Island. The first phase of the project was intended for Big Island consumption, but it was planned to expand this into a system designed to carry generated power from the Big Island over to O`ahu, where the power demand is the greatest (with 90% of the population, the majority power consumption, and of course all the State bureaucracies).

The geothermal system under discussion was first proposed in detail in the late 1970's. After initial studies showed the feasibility of the concept the then-titled Department of Planning and Economic Development,(now called the Department of Business, Economic Development and Tourism) began to move towards development and completion of the project. From the first formal summary (Decision Hawaii 1988) the goals of the project remained remarkably consistent. A series of geothermal power generation stations in Puna on Hawai`i would generate a total of 500 MW (megawatts) of power which would then be carried underwater and overland, island-hopping to Kaneohe, O`ahu, where they would be incorporated into the O`ahu power grid to add to Hawaiian Electric's existing power sources. The 1988 study estimated the cost of the total project at $1.7 billion (1986 dollars). The transmission system would consist of three underwater cables and two (actually four) overland cables carried on poles. Construction was originally planned to begin in the late 1980's, with the first plant delivering power to O`ahu by 1995 and the final plant on-line and the system generating 500MW by 2006. It was estimated that the system would generate 4.38 million kilowatt hours annually or the equivalent of 7.025 million barrels of fuel oil for Hawaiian Electric on O`ahu (all O`ahu power generation facilities are oil-burning), resulting in a savings of $346 million annually for the Hawaiian Electric Company, much of which would be returned to consumers in lower rates and lower dependence on foreign oil sources. The overland transmission lines portion of the project would cost 11% of the total cost for a total of $184.9 million (1986 dollars) (Decision Analysts Hawaii 1988).

The final summary concluded that the project was economically feasible. The impact on Maui was not considered to be of major significance. As the 1988 assessment notes:

> In order to simplify the analysis, Maui is excluded from consideration; however, in practice, the inclusion of Maui would either have no effect on the economic feasibility of the geothermal transmission system, or would enhance it. (Decision Analysts Hawaii 1988:ES-2)

While there has been widespread opposition to the project, it has focused almost entirely on the power-generating plants, as noted by Frierson (1991:217 -218):

> ...The developer was asking for zoning to permit enough wells to generate up to 250 megawatts of electricity. Current electrical needs for the Big Island are less than half of that amount. Campbell Estate [the developer and landowner], it seemed, was banking on... the Deep-Water Cable.
>
> Since the early 1980's, the state had been supporting the idea of a deep-water cable to carry geothermally generated electricity from the Big Island to Maui and O`ahu... The cable... would carry 500 megawatts of "Pele Power," as the proponents were calling it, through the longest and deepest-laid underwater power conduit in the world in order to meet O`ahu's soaring energy needs. Even though costs would be extremely high--and probably would be passed on to the public through taxes and rates—O`ahu's power monopoly, Hawaiian Electric, was arguing that the cable was a healthy move toward energy self-sufficiency for the state.
>
> Cable opponents pointed out that not only would Hawai`i County... be bearing the environmental impact of a project that would benefit another island... They argued that both the rift zone where the wells would be located and the ocean floor the cable crossed presented high geologic risk both from eruptions and earth movement.
>
> State officials on O`ahu supporting the cable project seemed singularly blind to the geologic risks... In 1988 Senator Daniel Inouye suggested in an interview that the "destiny" of the Big Island should be to become the "energy source" for O`ahu and Maui. One recognizes in this statement... the common urban Western attitude toward land as expendable resource. (Frierson 1991)

During the initial planning stages there were multiple options on placement of the section of the overland lines that would transit Maui (a total of 7 were evaluated). Meetings were held with the various county agencies that would have interests or concerns about the project. Maui County's reaction was not particularly favorable to the project, which is not surprising since Maui stood little to gain from the project:

> Concerns were expressed relative to interference with fishing, particularly on Penguin Bank, trenching, land point selection, land requirements for shoreside facilities, visual impacts of overhead lines and social opposition to geothermal development. (Krasnick and Chapman 1984b:55)

From the available documentation it appears that this was the last indication of solicited input from Maui County agencies into the project, though none of the reports contains actual documents from Maui County authorities. By 1987 the environmental studies were becoming much more detailed and it is apparent that the powerline placement had apparently been decided upon, though the procedures by which this decision was made are not documented. The final design calls for the line come ashore at Huakini Bay (Nu`u) and parallel the Pi`ilani Highway until it reaches `Ulupalakua where it would drop *makai* to `Ahihi Bay (Makena), where it would go back underwater over to Kane`ohe, O`ahu (map 1.1). In the 1987-1988 environmental assessments elevation had not been finalized, and the maps show the line being in a zone from approximately 200'-1800' elevation from Lualailua Hills through to

`Ulupalakua.

The rationale for the overland component to the project was made clear in a 1986 report:

> An overland route on Maui would save money in cable costs and avoid a very hazardous marine segment. The lines traversing from Huakini Bay to Ahihi Bay on Maui's west side would be inland rather than along the coast. The area is rural in character and is entirely within the Agricultural Land Use District. (Krasnick 1986:9)

This section of the powerline would have been approximately 20 miles (32 km) long. Despite some initial delays due to the development of new technology in the geothermal power plants (the Puna Geothermal Project), and the construction of a submarine power cable capable of surviving the great depths, especially in the `Alenuihaha channel, by 1989 the project was proceeding close to the projected timetable. However, a number of legal challenges, along with growing public opposition, began to force delays in the other phases of the project.

Despite mounting opposition from different parties the Federal Department of Energy (who were co-sponsors of the project) assumed that the State was continuing with the project. Legal challenges forced the Federal agency to fund initial archaeological and cultural resource surveys, which were begun along the east Maui portions of the proposed powerline in 1993 (Erkelens 1993, personal comm. 1994).

However, in 1989 the State (1994 personal comm.) changed its stance on at least the long-distance transmission line portion of the project to the following:

> Geothermal Energy Policy Statement [Governor of Hawaii]
>
> The State of Hawaii currently supports geothermal energy as a potential energy sources exclusively for the island of Hawaii. As such, the State supports the efforts of Puna Geothermal Ventures and True/Mid-Pacific Geothermal Venture to explore, develop and generate geothermal electricity in a safe and environmentally acceptable manner limited for use to the Big Island.
>
> The State of Hawaii is not taking any action to support a large-scale geothermal and undersea cable transmission project to export electrical energy to the other islands, and is not aware of any present efforts, public or private, to undertake such a project.
>
> The federal government has been mandated by the federal court to prepare an Environmental Impact Statement (EIS) for a conceptual. "Hawaii Geothermal Project (HGP)" consisting of a large-scale (i.e., 500 megawatts) development of geothermal power on the Island of Hawaii for transmission to Oahu and one or more of the other islands in the State.
>
> While the State will continue to provide information and cooperate with the federal government in the preparation of the EIS, the State's position is that there is no such project under consideration at the present time. (Department of Business, Economic Development and Tourism 12/92 letter)

Though the Department of Business, Economic Development and Tourism contact stated that the State had withdrawn in 1989, there appears to have been a breakdown in communications at several levels. The Department of Energy, pursuant to a Federal Court decision, was proceeding with the Environmental Impact Statement sections until May 17, 1994, at which time in the Federal Register it stated that:

> The Department of Energy (DOE) today withdraws its Notice of Intent to prepare an Environmental Impact Statement for Phases 3 and 4 of the Hawaii Geothermal Project as defined by the State of Hawaii in its April 1989 proposal to Congress. (Federal Register v.59 #94:25629)

Apparently at the same time Department of Business, Economic Development and Tourism and the Governor had decided to drop the transmission line phase of the project they were also pushing the project through Congress for Federal monies and support. The final project summary appeared in the Federal Register:

> The Hawaii Geothermal Project consisted of four phases: Phase 1-- exploration and testing of the geothermal resource beneath the slopes of the active Kilauea volcano on the Big Island; Phase 2-- demonstration of deep-water power cable technology in the `Alenuihaha Channel between the Big Island and Maui; Phase 3-- verification and characterization of the geothermal resource on the Big Island; and Phase 4-- construction and operation of commercial geothermal power production facilities on the Big Island with overland and submarine transmission of electricity from the Big Island to Oahu and other islands. Phase 1 was completed in approximately 1986 and Phase 2 was completed in 1991.
>
> On February 14, 1992, the Department of Energy published a Notice of Intent to prepare an Environmental Impact Statement for Phases 3 and 4 of the Hawaii Geothermal Project. Public scoping meetings were held from March 7 through March 16, 1992, and an Implementation Plan was issued in April 1993.
>
> On December 8, 1992, the Governor of the State of Hawaii approved a geothermal policy statement issued by the Hawaii Department of Business and Economic Development and Tourism indicating that Hawaii is no longer pursuing or planning to pursue the geothermal/cable project that it had proposed in 1989. Thus, DOE considers the project to be terminated. (Federal Register v. 59 #94:25629)

The timing of the State withdrawal from the project at the same time that serious legal challenges demanding a formal, full-scale Environmental Impact Statement makes for thought-provoking discussion, but little substance at present can be gleaned from the available documents. Another example of the failure in communication was that there was never any formal attempt made to inform County agencies or interested parties of this change in position other than the Governor's Policy Statement, as Maui County agencies, advisors to the Office of Hawaiian Affairs, and all Kanaio residents were still under the impression the project was on schedule for completion in 1993 (field interviews). This lack of communication reflects both the "Outer Island" mentality frequently exhibited by State agencies and also the Empty Quarter image.

Of major interest to this study is the series of Impact Assessments generated in 1987, as these provide excellent examples

of the bureaucratic logic employed in dealing with the Empty Quarter. In 1987 a visual impact analysis of the overland powerline was generated, which evaluated the possible impact of various configurations of towers and lines along the proposed route (OHM Planners 1987). They noted that in Hawaii there was no experience with lines to this size, as the largest current line in Hawaii was a 138 kv line on O`ahu, whereas the lines for the geothermal project would be 300kv (500 mw) lines. The methodology used to examine the visual impact of the transmission system was apparently taken from assessment procedures used by the Bureau of Land Management though no discussion was offered to justify the procedure. The methodology consisted of cataloging locations in terms of "pattern elements" (OHM Planners 1987:14) of form, line, color and texture. These were combined with pattern characters of dominance, scale, diversity and continuity for different landscapes along the route. The poles would be ninety feet high, with four lines, and a continuous right-of-way corridor would run underneath the transmission lines with an access road for construction, maintenance and repairs.

The consultants initially defined the differing visual qualities of the landscapes along the route and classified them into general landscape types. The consultants decided that most of Maui was the Hillside/Grassland landscape type:

> This is the dominant landscape type in the Maui corridor options due to the steep slope of Haleakala where the predominant landcover is a mixture of lava, scrub vegetation and grasses. This setting creates a variety in textures and colors in the backdrop which is very capable of visually absorbing a transmission line and Right-Of-Way. (OHM Planners 1987:40)

While the Kanaio-A`uahi section of the transmission line to the Hillside/Grassland landscape type, their own catalog picture uses Kanaio as the type-example for the Flatland-Ridge/Grassland landscape type. Given their own categories, the vast majority of the 20 mile overland segment would run through landforms similar to that portrayed in their picture for the Flatland type. Their assessment of the impact of the powerline on this landscape was not nearly as positive:

> …Transmission structures in this zone will often be in silhouette against the sky or a distant background form with no visible texture. Therefore, towers in this setting will have higher than average visibility because of their contrast with the generally lighter tone of the sky...
>
> There would be little opportunity to hide transmission structures with natural screening... Overall, the potential for contrast... would be high. (OHM Planners 1987:35)

It should be noted that throughout their discussion of visual impacts they were assuming that the lines would not be near the existing Pi`ilani Highway but some distance away where the lines could be hidden in natural topographic features from general view.

The consultants were also concerned about the impact the transmission line would have on visibility from major roads. Their analysis of the Pi`ilani Highway on Maui was general in nature, as was the rest of the analysis, as they made no attempt to subdivide the physical or cultural landscapes in the 20-mile stretch. They felt that the primary use type was a combination of residents and visitors, that the number of users was low-to-medium, and that the average traffic speed was low-to-medium. There was no final formal statement on the overall impact of the line on road users other than that attempts should be made to hide the line behind physical features from road view as much as possible.

A second document prepared was generated by Parsons Hawaii, but dealing with general environmental concerns (Krasnick and Mansur 1987). This report is much more indicative of the Empty Quarter image in its analysis of the importance and place of Kanaio-A`uahi (and in fact all of southeast Maui). The report analyzed environmental impacts in several discrete categories, but most disturbing is the extremely generalized nature of many of the assumptions. The authors noted that Maui would be evaluated as:

> Where an indeterminate area would be affected, such as with socioeconomic impacts, entire islands or the State are generally considered in the discussion. (Krasnick and Mansur 1987:66)

Thus social impacts of the project were not evaluated within the context of directly affected communities as Kaupo, Kanaio or Wailea, but the southeast Maui, the area impacted, was subsumed into the entire island. Specific categorical assessments of the impacts on Maui are also fascinating in that they reflect a very similar attitude to that noted earlier in the tourism literature. For agriculture,

> The Maui corridor passes through neither prime nor unique agricultural lands, but includes small areas of other agricultural lands. (Krasnick and Mansur 1987:82)

For recreation, the only portion of the impacted area noted as a recreational opportunity area is the `Ahihi-Kinau Marine Area Reserve. The rest of this section of Maui is seen as

> ...an opportunity area that has been identified or recommended, but is not necessarily recognized or favorably endorsed by the implementing agency...
>
> Similar to the adjacent beaches listed as potential resources, the coastline is without amenities except for the road. Nevertheless, the coastline is a popular recreational area as is, though visited by few numbers of people on a frequent (i.e., daily or weekly) basis. (Krasnick and Mansur 1987:85)

In both cases the frequency of use becomes the key factor in evaluating the resource. Their summary concludes that this area is very rural in character, with very low population density, and the nearest urban center is Wailea. There is no mention of either the Kanaio or the `Ulupalakua communities throughout the entire document. Most interesting, especially in light of the struggle between the State (Department of Land and Natural Resources) and members of the Uwekoolani family is the botanical assessment in this document. They first describe this section of Maui as "non-forest" land (Krasnick and Mansur 1987:83). This is followed by a more detailed discussion:

Southern Maui has a variety of native plants growing along its coastal shore, but low elevations generally consist of dry land that has been used for grazing and has been disturbed from its natural state. In the higher elevations are a few special areas that have more vegetation, such as the Auwahi forest at the 4000 feet elevation. In the deeper and larger gulches, such as the Manuwainui Gulch and the Pahihi Gulch, are the only pockets of vegetation found along the study corridor. No rare or endangered plant species have been recorded in the Maui study area (DLNR, 1987). (Krasnick and Mansur 1987:97-98)

Yet within 5 years a branch of this study, which cited the Department of Land and Natural Resources as a source, the same agency would find that rare endangered dryland plants of sufficient significance existed to declare the Kanaio Natural Area Reserve. The lower boundary of the Reserve is only 100 feet *mauka* of the proposed powerline easement. Between 1987 and 1991 the position of Forestry Division and the Department of land and Natural Resources on the significance of the botanical complex in Kanaio apparently changed drastically, though no formal study of the *ahupua`a* as a whole has ever been undertaken outside of Resnick (1977) to define the botanical complex, nor has any study ever been done in A`uahi to determine its botanical inventory, despite the fact that it is constantly cited by both Rock (1913) and Lamb (1981) as the final repository fur a number of unique dryland forest species.

The State's professed disinterest in pursuing the Geothermal project makes the quick reaction to the Uwekoolani land issue (the transmission line would pass within 200 feet) interesting, especially given the same agency's lack of concern about the impacts of transmission system construction at the same location just five years earlier. While the contested parcel is just *mauka* of the Highway, another Uwekoolani claim to land, is to the parcel just *makai* of the Highway. If they regained control of this *makai* parcel it would be one of the few spots along the Maui section of the powerline where the State would be crossing over land it did not control, as the rest of the alignment is State owned property leased out to various ranches.

The cost to the State of losing the Uwekoolani claim, especially as at the same time the State was hoping to generate an adverse impact statement for the project, and thus avoid both an Environmental Impact Statement and public hearings (private comm. 1994), would have resulted in increased costs, time delays, and unwanted public exposure.

Currently it is unclear how much the Geothermal Powerline project was tied to other interests the State has occasionally mentioned for the region. The Geothermal project included a 50 megawatt diversion to Maui, which was intended to provide for present and future energy demands on this section of Maui. Despite the lack of any documentation, in the planning reports there are occasional references to the development of similar geothermal plants directly in Kanaio (Krasnick and Chapman 1984). So the interest in geothermal power is not limited to long-distance cables.

All of this has ominous repercussions when one considers the State's formal position on future development fur the island, which is to be tourism-based. That the same agency responsible for the Geothermal Powerline project is also in charge of tourism development does nothing to ease local fears. Though no plans have appeared, much of the Kanaio community is convinced the State has plans to develop this section of Maui into another Kona Gold Coast region. As discussed earlier it contains all the necessary physical attributes: isolation from the more mundane areas; superb tourist weather; long lines-of-sight including other islands, sky and water; and most important, land controlled by the State which could be leased out at considerable gain to the State coffers. A minor advantage is the very small resident population, which may suggest to some planners that opposition to such development would be muted at best.

A belief common in Kanaio is that geothermal development (whether powerline or on-site) would be only the first phase of tourism development. The powerline would require a substantial upgrading of the existing roadway, making access much easier, especially once the new Kihei-Kula Highway is constructed. Power would be readily available, and water development, given the close proximity to major water sources in Kipahulu-Hana, would be much less costly than continued expansion in either Kula or Kihei-Makena. Given the lack of interest the State has shown towards Kanaio residents, concerns that such an agenda exists appear legitimate. It is a simple equation between the demands of the many (and powerful) versus the wants of the few (and invisible). In the evaluation of the various documents generated by the Geothermal Project there seems little doubt as to what the eventual outcome will be for those residing in the Empty Quarter.

Competing Images in the Near Future for Kanaio-A`uahi

As elsewhere in Hawai`i, Kanaio-A`uahi is in the midst of all encompassing change. The struggle between elements of change and those of the past will only become more intense as the space available to avoid these conflicts disappears. Thirty years ago resort development was limited to two areas-Lahaina-Kaanapali (a nine mile stretch) and Kihei (a three mile stretch), while residential and commercial development was concentrated in Wailuku-Kahului. Today an unbroken resort strip extends from Kapalua down to Waianukole on west Maui (for twenty-one miles) and from Ma`alaea to Makena (for twelve miles). There are now 11 golf courses on Maui, almost all located in these two resort strips (Oliver 1993).

In a twenty-five year period, the number of visitors to Maui has risen from 221,411 in 1966 (Farrell 1982) to 2,300,000 in 1990 (Halas 1991). Rooms at the newest hotels in Wailea (the Grand Hyatt Wailea and Kea Lani) go for $250 to $7500 a night (1993 rates). In 1991, the resident population of Maui was 97,200 and the daily tourist count 39,500, which meant that on any given day 28.9% of the island population consisted of short-stay tourists (Halas 1991).

At this point it is appropriate to discuss some of the predictions and recommendations made by Farrell in his 1982 examination of tourism on Maui. He noted that by 1982 there were large-scale differences in the ethnic mix of the resort areas and major jumps in population (tripling in 10 years) (Farrell 1982). He saw a major pattern developing in housing:

Developers cater mainly to middle incomes, the rich, and the very rich. During the past few years even buyers in the middle income range have been eliminated by high condominium prices. During the buoyant conditions of fast growth development served, unfortunately, many local, modest income speculators. Because in general, in the most desirable parts of Hawaii, developers provide accommodation well out. of the reach of the bulk of the population, great social distance may be created between resident occupiers who are most frequently in-migrants and local people or their families who, as the result of development, are often forced to live elsewhere in areas of lower land values or lower rents. (Farrell 1982:82)

A large proportion of the Lower Kanaio community (and many of the Upper Kanaio community as well) fit this prediction.

Farrell also noted the potential for major catastrophic growth in the Wailea-Makena area:

In 1976 there were 3,500 persons in the Maalaea-Kihei-Wailea region. It had 2,800 condominium units, 800 or more of which lay vacant or unsold. Nevertheless (one might be permitted to gasp), zoning still allowed for over 30,000 units--thirteen times the 1976 inventory. On a conservative basis of 1.8 persons per unit, a 50 percent occupancy rate, and the State Tourism Plan formula for employment, the future tourism-related population of the area could be 60,000. (Farrell 1982: 159)

...the Maalaea-Makena resort region, the largest in the state with almost 5,000 units completed and 37,000 units officially the present ceiling. Outside Waikiki no other region comes close to it. (Farrell 1982:286)

The ratio of tourists to residents was 20:1 in 1982, and the most recent figures from the State of Hawai`i show that the ratio has grown to 25:1 by 1992 (Department of Business, Economic Development and Tourism 1994 figures). The highest ratio at which tourism does not generate major stress is 2:1. But as Farrell (1982:225) notes, this is merely indicative of an area of greater concern:

Analytical discussion masks the tensions that exist between the groups which are simplistically called "the haves" and the "have nots." This implication of exclusively economic reasons for disharmony between two groups is patently not true. There is a great gap between the affluent and the poor. The tensions also exist between haoles and non-haoles, between immigrants and oldtimers, among ethnic groups, and among "locals," in-migrants, and the military. Tourism not only provides irritants but also emphasizes and brings into sharp relief a host of social and economic ills initially unrelated to it but attributed to it by many. The situation now is so bad that perceptive long-time observers see conditions as volatile and dangerous.

Given the Kula-style developments, which postdate Farrell's research, the conditions have become worse. A number of areas that were refuges for lower and middle-income level residents, especially part-Hawaiians, have been swallowed up in the complex development growth cycle.

A major change not visible in the early 1980's was the shift from condominium developments to more expansive (and expensive) single-family dwellings. It could be argued that while a condominium has a large number of wealthy occupants, the units proper do not take up much space and the development as a whole is restricted spatially and visually. On the other hand developments such as Kula 200 take up large tracts of land, and have enormous mansions scattered over the landscape in styles approaching and sometimes surpassing the ostentatious wealth of former plantation owners. Such symbols of inequity only bring Farrell's concerns closer to reality. As he noted back in 1982:

Rich mainlanders appear to flaunt their affluence in the face of less fortunate residents. This situation has a basis in fact. Tourist industry employees are not well paid and comparisons are made between their income level and the incomes of the affluent who visit Hawaii.. In 1977 the median family income of visitors to Hawaii was around $22,000, that of Hawaii residents one-fifth lower, while that of Hawaii visitor industry employees 12 per cent less still. The income disparity then between visitors and industry employees taken along with the high cost of living, high land values, and the necessity for several persons in the same family to have jobs is enough to provide a predisposition toward discontent. The perceived income disparity alone is not the problem. What is a problem is the disparity exacerbated by the marked differences between two societies. (Farrell 1982:235)

As bad as conditions were in the early 1980s recent trends provide a greater potential for conflict. New migrants purchasing a $700,000 piece of land and placing a $2,500,000 home on it, and living here as part-time residents, are a much greater source of stress and threat than a part-time condominium owner in a isolated resort setting, if only due to their greater visibility.

In addition the dependency on such a fickle industry comes at great risk, especially when the economic stability requires continued growth (Halas 1991). As Farrell noted this was fraught with dangers:

Scale is overwhelmingly important. Within a Hawaiian community, whether or not tourism enhances or is subversive largely depends on the scale of activity. Most persons and communities can tolerate tourism on a modest scale. Once the scale exceeds a limit, which will vary with the type of tourism, the ratio of tourists to local people, and the extent to which tourists financially support the community, tolerance becomes another matter…

With large-scale tourism or constant exposure to tourists, hospitality may easily wear thin, especially where tourists exist only as faces in a crowd or symbolic sources of income. The predisposition for amicability, nevertheless, remains, but the question is for how long? It is a valuable asset in need of nurturing... Like all relationships it needs working on and the application of respectful reciprocity. (Farrell 1982:232-33)

Farrell's recommendations were simple and could have easily been implemented: restrictions on future growth; all planning be community-based; and that social impacts become a major factor in all planning decisions. He also pointed out that the economic sector needed to diversify to reduce the overdependence on tourism. Except for limited community involvement in planning at the County level (Tanji 1993a, 1993b, for the positive, Hamilton 1994 for the negative), none of Farrell's recommendations have been implemented. Kihei-Makena has grown, development has spread to most rural areas such as Hana, and social impacts have yet to be addressed as major planning issues.

Failure to heed his advice means that for the present and short-term future tourism will continue to be the only major economic option for Maui. However, as Farrell predicted, the strain both on residents and the general infrastructure has reached the breaking point in many areas. As one resident noted:

If the present trends continue, the increase in the number of tourists becomes stunning. The most recent Hawaii Visitor 's Bureau analysis estimated that:... HVB projects approximately 80,000 new hotels, rooms and condos are planned for construction over

the next several years. This increase in accommodations would require about 13 million visitors annually by the year 2000 to maintain an (average) occupancy level of 81 percent. (Halas 1991:12)

We have to analyze the costs (of growth) not just in terms of the additional physical infrastructure that will be required, but the cost of the social infrastructure as well.

There are many hidden effects: higher crime, strain on our roads, schools, parks, demands for government services, police and fire protection. The physical part is only the most obvious component that comes with the surge in population. (Halas 1991:36)

More striking than the increase in the tourist count is the increase in the number of residents, up from 38,691 in 1971(Armstrong 1983) to 97,200 in 1990. As was noted by Halas (l991):

Maui is already the fastest growing county in the state. It has grown four times faster than the national average in the last ten years. (Halas 1991:36)

All of these statistics signal profound changes for Maui. One effect is that with the increasing affluence of new residents, combined with the huge amounts invested in resort developments and commensurate tax increases, there has been an erosion of areas economically accessible to long-term residents of lower income brackets. Kanaio has become one of the few remaining areas that Farrell saw as refuges from the uncontrolled cost of living. This has become a major impetus for migration to Kanaio-the desire to still own property and at the same time be pan of a lifestyle unavailable in Lahaina or Kula now, that existed everywhere on Maui only twenty years ago. This squeezing out of the local population is occurring on the other islands also, but Maui's case is possibly more dramatic given the tremendous increase in number of residents and the direct impact of tourist development.

Given the State's position that for the near future, tourism is the only viable economic option in Hawai`i, these trends will continue. While sensitivity about the social impacts of tourism are increasing (Buck 1993, Trask 1993), the lack of interest by State planners and administrators in pursuing alternative paths to economic stability, or even to heed the warnings and recommendations of specialists such as Farrell, will leave these as academic exercises rather than planning guidelines. At present the most positive view of Maui's future is:

As the Island's four new luxury resorts come to fruition, Maui County must resolve the question of future development. There is already a wealth of accommodations for any traveler's needs and wants, and these four are the last hotels to be approved before the Maui County Council's Interim Restrictions on development were effected April 1st of this year.

But this is, at best, a temporary measure. With the completion of the General Plan and individual Community Plans, Maui will hopefully provide for controlled growth, and include avenues for developers to give back to the communities, through improved roads, schools, parks and housing.

We are indeed fortunate to live here, and as hosts, we are often called upon to share our good fortune. It may not always be convenient, but in the long run it will be interesting to meet those who have come to enjoy the view. (Whitney 1991:61)

Even in a relatively positive view of the future, pressures of new residents, tourism, and jobs will increase the difficulties for Kanaio residents. Three issues appear to be central to the competition between images for control of the cultural landscape in Kanaio-A`uahi.

Tourism and the Frontier: It is likely that the next few years will witness increased tourism in Kanaio-A`uahi, especially in the form of recreational opportunities. Given present conditions at Kanaio-A`uahi the only direct tourism-related activity would appear to be in the use of the dry forest remnants as ecotourism, or increase in ritual use of the Buddhist temple. If ecotourism is economically feasible, it is possible that the Kanaio Natural Area Reserve and surrounding area could become a site for educational tours.

An expansion of current tourist activity is in traffic traveling through Kanaio-A`uahi. At present a considerable number of bicyclists use the main highway for bicycle tours, a rapidly growing phenomenon. As the highway has been improved the number of tourists driving to Hana has dramatically increased. If the proposed Kihei-Kula highway is constructed this will result in significant increases in traffic along this route, along with more casual sightseeing.

This could provide some economic opportunities for residents. One resident noted that another had already considered opening a wayside food and drink concession with bathrooms in Kanaio along the Highway as such places (especially the bathrooms) are in short supply on the long drive from Hana to Kula. If the tourist traffic increases this may become a viable venture. The short-term effect of the traffic increases is the increased difficulty and time required to travel from Kanaio into Kula for work, school or shopping.

Energy and the Empty Quarter: At present the Geothermal Powerline project appears to be a dead issue. However, if fuel oil prices me, or energy demands on Maui outstrip the ability of the utility to provide sufficient electricity, the plans for a Maui facility will likely be resurrected. If such a project becomes feasible, then the image of the Empty Quarter will return, as Kanaio is the most likely location for such a facility.

Kahikinui and Hawaiian Homes: Though Hawaiian Homes land is in nearby Kahikinui rather than in Kanaio-A`uahi, the increased use of this 15,000 acre area will have a direct impact. The present mood by interested parties for use of the Kahikinui property as reported at meetings revolves around development of the property for homestead or residential use (Eager 1992a). At present there are only a few residents in the entire *moku* of Kahikinui, so this would result in a major increase in population. As infrastructure demands are met, it is likely that available land in neighboring *ahupua`a* (such as Kanaio-A`uahi) will also increase in value to provide additional residences or services to this population. This increase in land costs and increased interference by State and County agencies will result in many of the same impacts Kanaio-A`uahi that tourist development will generate collapse of the Frontier image along with increased costs and regulation. Whether through tourism or residential development the various bureaucracies will have achieved their goal, to tame the Empty Quarter and improve it into an area reflecting dominant values of economic success.

Internal Pressures of Land Access

As has been true for hundreds of years in Kanaio and A`uahi, the two major issues that fracture the Kanaio community and strain social relationships are access to water and land.

Water: Surface water is rare in Kanaio, as it has been for hundreds of years. Kanaio in 1994 is significantly drier than it was in 1700. Competing populations of people, cattle, goats and horses struggle to find sufficient water in this dry environment. Seasonal rainfall has been erratic in the last 30 years, and drought has plagued the entire Honua`ula area for much of the last 10 years. When the residential population was small the demands could be met with a combination of the Kula Pipe Line and the large *mauka* Reservoir in Kanaio.

With the increase in residents since the middle 1980s, water has become more scarce, and water pressure in the small waterlines which snake down the slopes have dropped. Human use includes gardens, pets and other auxiliary functions, and so water consumption tends to multiply as new residents set up house. A constant question asked by residents was whether I was looking for underground water, and even if I was not, did I know of maps or other indicators of untapped water sources in the immediate area. This concern is well-rounded. Water shortages have become a perennial problem and major political issue for all of east Maui, with open conflict between the older established agricultural community and the recent migrant residential estate community (Tanji 1993a, Eager 1992a, 1992b, 1992c). Though Kanaio does not yet have the problems of large-scale development the tensions are the same.

It is possible that this issue may be resolved through a combination of factors:

The increase in the residential population has put pressure on reducing the pasture and size of cattle herds in the *ahupua`a.* As `Ulupalakua Ranch controls A`uahi, that area is not open for pasturage to Kanaio residents. A significant proportion of Kanaio, on the recent *`a`a* flow, are not suitable for cattle in any form. As residents continue to move into Kanaio, they are competing with cattle. The number of cattle will start to decrease as owners will have to both water and feed, instead of the old system of open range, significantly increasing the cost of keeping cattle.

The conflict between LLL Ranch and residential cattle is an example of this situation. The numbers of cattle will have to be reduced unless people are willing to spend a much more significant portion of their income on cattle rearing than they have had to in the past.

As more people move into the area, the tolerance for wild goat depredations of gardens and general presence in Kanaio will also decrease. At present the majority of wild goat herds are already in less trafficked and also less hospitable new *`a`a* sections of the *ahupua` a.* Though hunted by individuals and `Ulupalakua Ranch the numbers in the herds are high. There will likely be an increase in hunting by individuals looking both to reduce a pest and at the same time supplement meat intake, especially if there is a decrease in the number of cattle.

A second factor is a rapid rise in the number of trees. Most of the long-time residents (1970s) noted that there had been a significant increase in the rainfall and moisture levels in the last 8 years, even though overall conditions in east Maui were poor due to drought. It appears likely that the returning tree cover may be the major factor for this change, as it was specifically noted by a large proportion of the residents. This is also supported by Resnick's (1977) research. If this pattern continues, and rainfall (and more importantly mist catchment) increases, then some of the water demands (at least for crop watering) may not increase as much as expected.

Land: In the near future the main area of social friction in Kanaio would appear to be the role and place of new residents. The number of returning families is increasing yearly, yet the available land area has not increased, nor has the infrastructure (especially water and power) needed to handle such an increase. The population increase is playing havoc with many of the treasured images of Kanaio, both of Home and Frontier. Without some sort of collectively-accepted council or leader(s), this conflict will become more visible as long-term residents feel themselves squeezed out of their rights by new arrivals, but equally frustrated in the fact that most of the new arrivals have some genealogical legitimacy to the land. The loss of the Uwekoolani case against the State, which could have opened up land in both east Kanaio Homesteads and also further parcels in west Kanaio Homesteads, indicates for the near future growth will have to come on the lands already occupied and in most cases shared by family groups. Movement by Lower Kanaio families into contested Upper Kanaio lands will continue, causing further friction between Lower Kanaio and Upper Kanaio residents. If return migration continues the character of contemporary Kanaio will change, either in the complex social forms the community operates within or in the values expressed and played out by residents. In the near future control of and claims to land will continue to be the major topic and source of stress within the Kanaio community.

Concluding Views of the Cultural Landscapes of Kanaio-A`uahi

Several issues relating to land use and commonly-held assumptions about land in Hawai`i came under examination during this research. Several of these are assumptions frequently used by planners, while others have been points of intellectual discussion. The highlighting of these issues is a good example of the value of grounded process, as these issues were not part of the original research design, but persistently reappeared in the cycles of code and memo development (figure 2.3). The success or failure of these themes to provide organizing categories for the field data was instructive and warrants a short discussion.

Fallacy of the concept of shared use

A theme common in development circles is the concept of shared use. This has gained in popularity with the increasing demands of various identity groups (often ethnically-defined) for control over resources. Shared use is seen as a way to mitigate the friction and competition between minority and majority groups with divergent interests in situations with limited space and resources. In Kanaio-A`uahi this concept is more one of rhetoric and media image than reality. As noted in the discussion about the Geothermal Powerline, the concept is more accurately defined as minority groups being allowed to entertain themselves with activities/values on the landscape that do not impinge on State (majority) needs or goals.

The problem is that State needs and goals change. The Kanaio Homesteads were set up in the early pan of this century as the Territory (State) was interested in obtaining revenue from marginal lands, expanding the local food production base, and reversing the migration from rural areas to the urban centers (Sahlins 1992). Individuals were encouraged to move back into the Homestead parcels

to keep these marginal lands productive.

In the latter part of the same century the State does not want the same groups moving onto the same land, as the goals and interests of the State (majority) have changed. A good example in action is the State's eviction of the Uwekoolani family off the land with the logic of protecting endangered plants at the same time they (the State) continue the lease the land to ranching interests. Within the same period the State was willing to allow the Geothermal transmission line to be constructed through the area. At no time did the concept of shared use as a point of negotiation to resolve the dispute get brought up by the State agency. The State's definition is more accurately multiple uses, but only those which fulfill the States' criteria. Obviously shared use does not equate to equality in power to decide appropriate use, therefore the cultural landscape will still reflect the struggle between various interested groups.

The physical landscape as a passive force

The concept of the land as an active and animate force, which is on one hand basic to the New Age religious movement and avoided as folk culture by planning agencies is a key concept to understanding perception and arguments not only in Kanaio-A`uahi but elsewhere in Hawai`i. The Euroamerican, rationally-based view of the landscape as a passive playing field which people shape and modify to their specifications, while conforming to civil engineers and urban planners, is contradicted by the social evidence in Kanaio.

All groups that have a persistent presence in Kanaio-A`uahi see their link to the place not only in emotional terms but also with the place as a living presence. `Ulupalakua Ranch's owners feel a strong emotional bond to A`uahi, and see the place as actively interacting with them. The Upper and Lower Kanaio communities, while disagreeing over many items, do agree that the place is an active agent. Whether it be imbued with the *mana* of ancestors and family (Lower Kanaio) or a more general Gaia-based concept (Upper Kanaio) the concepts are strikingly similar. This is especially true when it is realized that the concept actually shapes social interaction. A common pattern for dealing with possible conflict throughout Kanaio is with avoidance. The process is based in the belief that the place (i.e., Kanaio) will actively police the situation and chase away the offending parry. Many residents gave examples of the success of this procedure, which imbues the landscape with an active and animate presence.

This perception is being increasingly tested in two separate ways. Within Kanaio, the principle of avoidance is becoming increasingly difficult to achieve with the decrease in available space. The principle is only effective in areas with low population density where one can avoid the other party, or if necessary move elsewhere in the community. While a viable option twenty years ago, for most residents this option has disappeared.

The second test is in dealing with external forces. The belief in the power and active nature of Kanaio is limited to the residents of the place, and does not extend to government agencies. In contrast outsiders see the area as marginal and the Empty Quarter. While in the past this has allowed residents the freedom to go follow their own path, the counter is that when the area does become of interest to powerful outside groups they do not feel any particular reason to be concerned about such a small community. There seems to be a view in the Kanaio community that the place (Kanaio) will come through to resolve the issue as it has in interpersonal cases, protecting those it has invited to live in it and considers family. Regardless of the relative success or failure of the concept, the fact that it is commonly held by community members defines it a substantive issue. While metaphysically or rationally it might be in debate, socially it exists, as social patterns and interaction are based on Kanaio as an active, animate force rather than a passive, inert geographical feature.

Loss of the Frontier and Empty Quarter images

As noted earlier Kanaio and A`uahi are perceived as the Empty Quarter by most outsiders and even by a few residents. In the past this has been an advantage to some groups. To `Ulupalakua Ranch it meant that improvements were not crucial as no one had great expectations for the land, so secondary use such as goats could be condoned or even encouraged, despite the fact that they competed with the cattle for pasturage and water.

This lack of productivity also allowed the Ranch to remain the major player in Kanaio affairs for many years, with little external interference, as the Empty Quarter was not of interest to other groups.

To the bureaucracies and the tourism industry, Kanaio is a waystop between Kula and Hana, of little interest and no economic opportunity. This meant that bureaucratic interest in development of the area is minimal at best. This can be seen in the continued utilization of Pu`u Pimoe as a firing range by the Hawaii National Guard, certainly not an indication of highly valued land. This has also meant that activities in the area are not heavily monitored.

To the residents this lack of interest has been very useful. As long as people have avoided areas or activities that threatened the Ranch (or to a lesser extent the military) they have been pretty much free to do as they please. This allowed families to live in areas of questionable ownership and pursue lifestyles outside the norm. However, as these groups have become more settled, with improved housing, better road access, gardens and rapidly-increasing tree cover, unanticipated changes have occurred. Primary among these is the increasing attractiveness of "going back to the land." This does not mean to traditional 17th century dry forest agricultural pursuits, but rather to a contemporary rural lifestyle. As residents have successfully made Kanaio more comfortable and attractive, these little changes have made the area even more enticing to both new migrants and returnees.

With the population increase and the visible changes on the landscape, the interest of various bureaucracies has been triggered, and the lifestyle freedom that made Kanaio originally so attractive will be lost. This can most clearly be seen in the increased number of disputes over land access and control. An increasing percentage of these issues are becoming formally contested, and invoke the bureaucracy at one level or another. For many individuals and families in Kanaio, the more they struggle to keep what they have, the more they will attract the formal interest of the very groups they were originally trying to avoid.

Given the present rate of change it is likely that Kanaio will be a fully-regulated community with inspection and intervention from all appropriate agencies in the next five years if not sooner. This will undoubtedly change the character of the community, and may result in an increase in outmigration. The major factor mitigating against large scale outmigration is the lack of suitable alternative locations. In many ways Kanaio-A`uahi can be seen as the end of the road on Maui for individuals seeking places unfettered by most bureaucratic regulation, so in most cases individuals will adjust to the changes rather than try to avoid them.

Impact of the *moku* on the cultural landscape

In the introduction it was noted that the *ahupua`a* of Kanaio and A`uahi were chosen in part due to their being border units in two contiguous *moku,* Honua`ula (Kanaio) and Kahikinui (A`uahi). The results of this study show that the traditional landscape varied little between these two *ahupua`a.* The density and placement of the pre-western cultural landscape is nearly identical within variations in natural features, as both *ahupua`a* contain several concentrated settlement areas surrounded by dispersed habitation areas, all based on dryland agricultural production. Coastal resource exploitation was significant but likely only a supplemental force in survival during this period. A defining factor appears to have been related to the locations of the recent (1600 to 1800 A.D.) lava flows that border Kanaio. These flows act as border features between Kanaio-A`uahi to the east, where the recent *`a`a* flow is a striking marker of the boundary between the *ahupua`a* (Map 1.2), and between Kanaio-Kalo`i to the west, where again a flow acts as a visible boundary marker in the area of concentrated human activity (1400-2400 feet)(Maps 1.5, 1.6).

This pattern continued into the historic period with the drop in total population, deforestation and outmigration. A`uahi was completely abandoned to ranching by the late nineteenth century, while the Kanaio community persisted but coalesced around Honua`ula Church. Sporadic, seasonal movement to the coast continued into the middle of the twentieth century for isolated individuals, but the dependence on the land to provide basic sustenance was abandoned, and Kanaio became a part-time residential and recreational community.

This segregation between the two *ahupua`a* persists to the present. A`uahi continues to be essentially unpopulated, and defined by single-use (ranching) and single owners (`Ulupalakua Ranch). Kanaio has become increasingly complex in terms of residence, most of which reflects nineteenth century patterns of land claims held and lost. Kanaio contains multiple use--ranching as the only economic activity, military use (Pimoe firing range), religious (Honua`ula church and the Buddhist temple) and residential. The contrast between the two *ahupua`a* is stronger now than at any time in the past, though the concept of the two *ahupua`a* as significant political or social entities has vanished. If the *moku* concept has had any impact on the contemporary landscape it would be in the nineteenth century decisions such as the placement of Honua`ula Church or decision to keep A`uahi a single land unit.

This has implications for State and County planners. As populations still view both *ahupua`a* and *moku* as legitimate conceptual boundaries, governmental agencies must do the same. Development plans, especially related to zoning issues, should address this concept. Rather than island-wide, or East Maui, as the areas are usually defined, they should be defined within their traditional context. This not only provides continuity with past concepts of the land, but in many cases mirrors past legal and governmental land decisions (such as Mahele awards). It would also signal an increased willingness to accept local community attitudes, input and values of place in the dialogs about future use that will necessarily arise.

CHAPTER 5

GROUNDED PROCESS AND CULTURAL LANDSCAPES

This study had two aims. The first, the concern of the third and fourth chapters, was to describe and interpret the cultural landscapes, past and present, that make up the elephant of Kanaio and A`uahi *ahupua`a*. The second goal, and the focus of the first and second chapters, was to assess the viability of applying concepts derived from various approaches current in cultural geography to a single research setting. Two criteria guided this second objective. First: the ability of each concept to contribute usefully to field enquiries or according to an early image, to help describe the elephant of the cultural landscapes of Kanaio-A`uahi; and second, how far different concepts can advance a research framework reflective of several different theoretical stances.

An appropriate methodology was crucial to coordinate and integrate various concepts in cultural geography towards understanding a particular cultural landscape . The theory of grounded process, shortened to 'grounded process' throughout this study, was chosen for its emphasis on in-field development of both research questions and incipient answers. On the one hand, this provided the strategic flexibility to apply different concepts and their methodological dimensions at appropriate points in the research sequence without, on the other, challenging the integrity of the overall project.

To return to the parable of the blind men and the elephant, its moral is the inability of the blind men to realize that individually, *they had an insufficiently broad view to describe an animal as immense and as complicated as an elephant,* not that they were inaccurate in their descriptions. This parable applies equally to most academic disciplines, but none more so than cultural geography, given its tremendous diversity of subject matter and lack of theoretical cohesion. Advocates for discrete theoretical stances become the blind scholars, each with a clear but restricted view of the subject matter, in this case the elephant of the cultural landscapes of Kanaio-A`uahi.

Some of these concepts are rooted in current intellectual fashion, some in measurable phenomena, some in intuitive and emotional reactions to images and places. Common to all, however, is an intellectual inability to apprehend complex phenomena in sufficiently holistic fashion. This is where grounded process, with its eclectic concern with various forms of information can provide the integrative glue that the blind men were lacking. Intellectually, it is not the only alternative methodology; rather that for a single researcher trying to piece the elephant's various parts, it provides a simple yet powerful analytical tool.

The sequence of identifying, defining, and examining categories and memos forces a comparison of various sources and forms of information, as well as helps incorporate details as they become available from newly introduced approaches, without disrupting the original intellectual constructs of the elephant. A constant flow of information becomes additive, rather than a means of validating or challenging presuppositions, as in the implementation of the scientific method. Such a research strategy encourages diversity and flexibility of data collection, analysis, and interpretation, at the end resulting in a far more complete description of the elephant. If, in scholarly enquiry, the scientific method strives towards greater specificity, then the grounded process pushes towards greater generalization. During the initial phases of field research in Kanaio-A`uahi, there was a conscious interplay between choosing concepts and identifying appropriate codes and memos (table 2.1). As the applicability of one concept to particular field data was seen to be exhausted, then another would be chosen for further investigation. This additive process means that it is impossible to nominate which concept contributed most to different chosen codes and memos for comprehending particular sections of the elephant. In, what follows, the cultural landscapes for the *ahupua`a* of Kanaio and A`uahi will be discussed in terms of the relative contribution made by different concepts in cultural geography when filtered through the lens of a single researcher.

Genres de vie

On closer examination, the *genres de* vie approach is far less a formal theoretical construct for cultural geography than a focused orientation that provides a consistent philosophical basis for research. The lack of both formal concepts and an integrated methodology made its rigorous assessment impossible throughout the project. As presently articulated in the literature, the *genres de* vie approach is neither sufficiently explicit or intellectually rigorous to specify questions for primary investigation. Paradoxically, it is this same lack of formal clarity that renders it as intellectually eclectic as the theory of grounded process.

As noted in the second chapter, the need for a philosophical frame of reference for field research led to *genres de vie* being chosen for the initial phase of primary enquiries. At one level this approach provided an intellectual logic for combining concepts derived from various theoretical stances, as well as their particular methodologies. Basically, however, the formal contribution of *genres de vie* was limited to this initial phase of research, since the absence of specific modes of explanation made difficult its ongoing application to codes and memos as the amount of primary data burgeoned. In short, the distinct lack of conceptual and technical specificity of *genres de vie* is both its great strength and cardinal weakness. It facilitated a flexible and integrative way of viewing changes in cultural landscapes, being in many ways a viable alternative to grounded process.

Conversely, without a rigorous conceptual structure or formal methodology, researchers are left to their own predilections as to which modes of explanation are appropriate in given situations of field enquiry. So little intellectual direction can lead to inefficient use of field time and, far more critically, encourages idiosyncratic analysis of cultural landscapes. Technically, the absence of a clear conceptual structure for *genres de vie* allows a myriad of field methods to be attempted but, without any intellectual logic to justify their particular use, makes the integration of subsequent primary data circumstantial at best. Especially for the inexperienced researcher, it is possible to travel down many blind alleys in, the quest for what appears to be pertinent information or, worse, spend most research time on a single technique without realizing the great strength of *genres de vie--a* balanced, overall discussion of the area under examination.

First Concept · Human-Environment Relationships

This concept, based on the premise that the cultural landscape reflects the complex and everchanging relationships between human occupance and physical environment, was the first applied to archival and field data for Kanaio-A`uahi (table 2.1). It was central to identifying and defining codes and memos pertinent to understanding both past and present cultural landscapes in the study area, especially their persistence and change over time. Given the ability of rational approaches within the human-environment school

to deal with quantitative and measurable information, this approach allowed Kanaio-A`uahi to be compared with other areas of Maui, the rest of Hawai`i, even the Pacific Islands in general. It also facilitated the definition of categories of present and future land use.

As anticipated, the concept of human-environment relationships was an effective way to organize material from many different sources. A case in point was the implications of the distribution of dry forest (Resnick 1977) for the presence of numerous agricultural features established during archaeological survey, since these were areas of food production yet clearly not supplied regularly with surface or spring water. Other patterns of field data, contradictory upon initial categorization, became comprehensible through the application of this concept.

Appreciating the image of Empty Quarter held by numbers of external agencies, who rarely visit Kanaio-A`uahi, owed a great deal to the utility of the human-environment approach (Chapter 4). This and similar concepts provide the logic with which such nonresident groups operated, and which, in turn, clarified decisions, assumptions and about managing or controlling this Empty Quarter. As an intellectual tool to discuss such issues as the local development of tourism, changes in land zoning, preservation of the environment (Kanaio Natural Area Reserve), and the routing of a geothermal powerline, this concept was invaluable.

Competition and conflicts about contemporary land use, both within the Kanaio community and between Kanaio residents and `Ulupalakua Ranch, generated a great deal of information about economic decisions in the areas. The human-environment concept facilitated discussion about how ranching interests and the increasing residential population of Kanaio were competing for basically the same land. It clarified, for instance, why particular key locations and landscapes had experienced so much human modification and why other locations, like the dry forest remnants in east Kanaio-A`uahi, had remained largely intact. In Kanaio-A`uahi, as elsewhere, economic issues dominate much local discussion and are a major source of group conflict, so that the concepts of human-environment links was key to defining explanatory codes and memos that became so central to discussing changes in cultural landscapes since the Second World War (Chapter 4).

As anticipated, the critique by cultural geographers that this concept is unable to illuminate issues relating to group values and personal attitudes towards land was reaffirmed. Beyond the contexts of economics or regional planning it did not shed any light on people's interest or disinterest in parts of Kanaio and A`uahi, especially if these were couched in terms of ritual or personal belief. The same was true for the archaeological domain, since ritual sites or ground features whose functional character was ambiguous were unintelligible in terms of this concept.

Somewhat surprisingly, threat of physical hazards (wind, water, volcanic activity) and the previous responses of residents were unimportant in local conceptions of cultural landscape. Lack of surface water, although critical, is alleviated by tapping it from the Kula Pipe Line for a limited supply. Often, voluntary systems of sequential rationing are necessary because of low pressure, but community access to water is not a visible concern. Extraordinary high winds, major floods, or volcanic activity occur so infrequently from one generation to another that these are seen as future "acts of god" rather than situations to be addressed immediately. Similarly, the limited use of the coastal zone for recreational fishing likewise meant little interest in high surf or near-shore conditions unless a specific trip was contemplated. In modem Kanaio, economic and social needs are dominant, so that natural hazards only become part of the world view during abnormal conditions. Apart from stories about winds and floods, recent experience with natural hazards has been so limited that little could be elicited about future and potential responses.

Second Concept: Cognitive Maps

To identify codes and memos that might establish links between cognitive images and cultural landscape required details most likely to come directly or indirectly, from interviews. Some archival materials, specifically the Ashdown papers (1977a, 1977b, 1970), the Sterling manuscripts (1966-71), and the interviews with Sam Po (Chapman and Sterling 1968, 1966, Newman and Sterling 1971, Pukui and Williamson 1966, Sterling 1968, 1967a, 1967b), contained information that might have been illuminated by the concept of cognitive maps and in-depth interviews were conducted with several residents for the same purpose. Apart from the need for particular kinds of information, a second limiting factor in applying this concept came to be a significant lack of contextual information.

The interviews that Peter Chapman did with Sam Po were rich with Hawaiian names and images of place, especially in lower Kanaio. This fact, at the outset of field enquiries, was thought to have great potential for establishing continuity between past residential patterns and the contemporary community, especially since in Lower Kanaio the two populations are both genealogically related and socially linked (table 2.1). Several impediments worked against this early promise. First, it was difficult to obtain accurate translations to the names located by Sam Po and, second, to establish any contemporary use of the same naming patterns. These same difficulties arose in the interpretation of the Sterling manuscripts (1966-71), especially in the persistence of places mentioned. This inability to link cognitive patterns past and present of landscapes in lower Kanaio was unexpected, since less than twenty years has elapsed between fieldwork and the Sam Po interviews (1966-71), most residents were aware Peter Chapman had held these discussions, and, in fact, several knew Sam Po personally.

This failure illustrates the exponential loss of information among peoples and in societies such as Hawai`i, where many crucial details are still oral and familial rather than written and public. A further limiting factor to the application of cognitive mapping was the consequent dependence on contemporary sources. With greater depth of traditional literature, personal facility with the Hawaiian language, and clear continuity of naming principles between past and present, this approach could have become central to a holistic reconstruction of the elephant's parts. Even so, the concept of cognitive map was a key contributor in two major categories: place perception of legitimate and vested ownership; and the links between naming principles and precepts of cultural landscape. This was especially so when analyzing communities, contemporary images of place in Kanaio-A`uahi and the connections between Lower and Upper Kanaio (chapter 4).

In the final phases of field research, several memos pointed towards some distinct shifts in naming places that appear to have occurred since Sam Po was interviewed. With few exceptions, coastal names are not currently used by residents. Within the contemporary community, naming is based on general orienteering by physical features (Pu`u Mahoe, Pu`u Pimoe, Lualailua Hills), road intersections, public structures (Buddhist temple, Honua`ula Church), and individual residences (the Goodness House, the Bums House). In common with Hawai`i in general, this suggests a loss of traditional place names based on ritual and ancestral ties to places whose names frequently are tied to social relationships and features of human occupation.

Third Concept: Conceptual Landscapes

The conceptual landscape, a key notion within the landscape as signifier tradition, is based on the premise that all material aspects of a society's culture, even the built environment, reflects the beliefs and values of the group. Given the various ethnic communities that make up Kanaio as a place, combined with the early record of Hawaiian tradition in its various archaeological features, the conceptual landscape was an early choice when identifying codes and memos (table 2.1). As fieldwork progressed and the complex patterns of multiple cultural landscapes came increasingly to light, so this concept become one of the dominant in the project. During later phases of primary enquiries, especially in-depth interviews, it was clear that beliefs and values were major determining factors for much of the attitudes that underpinned individual and collective action within Kanaio-A`uahi.

The particular beliefs and values that define and bind together the very different communities of Lower and Upper Kanaio, as well as the unifying attitudes and feelings held by both groups of residents about Kanaio as a place, could only be understood through the notion of the cultural landscape as conceptual landscapes. Its great strength was the ability to clarify Kanaio-A`uahi is so valued by such a diverse set of people, thus exposing the logic that underlay the thinking of community members, in both an individual and collective sense. Kanaio as a place is held together and identified by icons and symbols that in turn define and bind community members, and lies at the heart of different contemporary landscapes as discussed in the fourth chapter. The same concept was expanded to explain how the community has created key symbols and categories of images as territorial statements upon which ongoing struggles both within itself and with external agencies focus (chapter 4).

However, as pointed out by previous critics, the conceptual landscape is not without serious limitations. For Kanaio-A`uahi, it was the assumption that the environmental parameters of a place are an inert playing field, upon which various groups struggle for ascendancy and control. In fact, this physical landscape is anything but inert or passive, especially given the overriding constraints of surface water and soil. To ignore such factors severely compromises the ability of the conceptual landscape to apprehend the complexity of human-environment relationships and in so doing, to appreciate the elephant that is the cultural landscapes of Kanaio-A`uahi.

Fourth Concept: Landscape as Signifier

The premise of landscape as signifier is that the placement of structures, especially those of symbolic and ritual importance, reflect geomantic principles and in turn, the ritual worldview of the society. Since geomantic descriptions abound in early Hawaiian materials (Haleole 1863, 1862, Waialeale 1834) and more contemporary manuscripts (Chapman and Sterling 1966, Newman and Sterling 1971, Pukui and Williamson 1966, Sterling 1968, 1967a, 1967b, 1966-71), this concept appeared highly appropriate to the early ordering of codes and memos and, especially for interpreting archaeological features in the two *ahupua`a.* Anecdotal evidence from Kanaio also suggested that spatial patterns of residential land use, and of the nature of landscaping signified ethnic differences within the community.

In fact, the applicability of this concept was limited in several ways. First, for the precontact cultural landscape in Kanaio-A`uahi there existed no detailed descriptions of land in dry-land forest as distinct from nearby agricultural production (Resnick 1977, Handy and Handy 1972, Handy 1940) in turn critical to understanding whether specific sites and patterns of location were defined by pragmatic considerations, technical demands, or ritual worldviews. Since agricultural production dependent on the location and density of dry-land forest is unique to Hawai`i, argument by analogy from similar environments could not be attempted. Similarly, the absence of any comparable agricultural use at present, or of a parallel dry-forest expanse sufficiently great to construct plausible models, limited description to a few early sources about Hawaiian plants (Handy and Handy 1972, Handy 1940). Such material was an insufficient basis to specify any codes or memos that might account for the location and placement of archaeological sites.

Second, as the sequence of codes and memos continued to shape field research from the initial phases, it became clear that to collect sufficient information to apply the concept of landscape as signifier would require enormous investments of time. The detailed mapping of discrete items on the land and their spatial arrangements that would be necessary have no great utility for or transferability to other key concepts, let alone whether those resident would be willing to allow such detailed field activity. Several families occupy land that is at least contested and the construction of their residences did not necessarily follow approval from some distant bureaucratic process. While this research had considerable support at the level of the whole community or smaller groups, to have shifted the emphasis to the level of the particular family or individual resident likely would have generated visible tension throughout Kanaio-A`uahi.

A host of ethical, legal, and bureaucratic implications also would have confronted residents and researcher had detailed records of both location and type of house construction become available to external agencies. The ethical complications to such sensitive information is not discussed in the literature on landscape as signifier, nor is it likely that the Kanaio-A`uahi situation is unique. In the end, the huge investment of time involved, the lack of sufficiently detailed source material (especially for precontact landscapes), and the need to maintain good working relations with as many members of the community as possible, meant that this approach was abandoned about the middle of the research sequence. While the concept of landscape as signifier has intellectual value and promise, the cultural landscapes of Kanaio-A`uahi research was not a suitable topic for its application.

Fifth Concept: Experiential Landscapes

This concept assumes that all research has imbedded within it the conceptual and cultural biases of the investigator and, in particular, that all information becomes filtered through the perceptual and social frameworks of the individual. Of all concepts used in this study, that of experiential landscape was the most difficult to apply--technically, through the need to make daily diary entries in a personal field diary and socially in the shift away from conventional roles of researcher and from conventional concepts of privacy. For someone trained in the western scientific tradition, where the researcher is distanced from the ongoing study, this constant repetition of writing down daily field experiences is challenging. These diary entries continued throughout the various field phases (table 2.1, appendix II) and the resultant information became important to implementing the theory of grounded process (figure 2.3).

Despite difficulties of implementation, this approach focuses attention on the perceptions and biases of the fieldworker, a dimension of scholarly activity often ignored or glossed. Describing in a personal diary situations and impressions as they occurred each day in the field was not only critical to identifying and refining categories and memos but also, more importantly, helped to highlight problematic areas at different stages of the research that had not been considered (figure 2.3). Such a wealth of detail operated as a form of checks and balances when implementing grounded process as a organizing method, which in itself lacks an effective structure and has the potential to become self-validating (chapter 2). The concept of experiential landscape in part provide such an inherent structure as diary entries are read and reread, examined and reexamined, for lines of enquiry abandoned or not pursued.

Although effective, the original rationale for introducing the concept of experiential landscapes into primary enquiries was different. It was to establish the perceptions and understandings of a place, Kanaio-A`uahi, and whether these had changed over time--a less useful idea, in that these particular cultural landscapes were those of residents rather than the investigator. The implication that an outsider's worldviews of the landscape reflect those of any resident assumes a level of shared experience confined to interacting only with physical aspects of the overall environment. In any community like Kanaio where oral traditions predominate, residents have emotional and ritual links to the land that are particular to themselves and not shared by outsiders, including research workers. At this level, the concept of experiential landscape is overly naive and glosses a highly diverse area so that, at the end, the complex reality of the Kanaio community becomes lost from view.

Sixth Concept: Time-Space Allocation

Given the assumption that individual patterns of travel on a landscape reflect personal and social decisions about the use of time, it was thought that the notions of time-space allocation would be a key organizing concept during field research. This was especially so since wager earners must transit every day from Kanaio to other locations on Maui and to make basic purchases in a community without stores involves a drive of at least two hours. All schools are located at equivalent distances, making Kanaio in many ways a bedroom community for parts of Kula. Yet other advantages for a time-geographic study of Kanaio-A`uahi seemed to be the comparative lack of transportation corridors (only one highway) and of various modes of transport (cars or trucks).

A further expected advantage of applying time-space allocation is that it would tend to level socioeconomic distinctions between various groups within the Kanaio community through being rigorously quantitative in implementation. Collecting details about individuals and daily travel portrays real world patterns in the personal allocation of time and space and, for this reason, would emphasize common issues tending to unify the Kanaio community, regardless of contrasts in ethnic identity or value systems. Consequently, a significant period during the middle stages of field enquiry was given over to obtaining travel data to implement this concept. Unfortunately and paradoxically, this was an impossible goal to achieve in the time available.

As with the concept of landscape as signifier, the number of hours needed to collect detailed data that could be used for only one concept was not an efficient use of limited field time. A second and unanticipated impediment was the tremendous demands placed upon Kanaio residents to keep detailed and accurate activity diaries--a demand that was seen to be unreasonable when other field techniques meant intrusions into daily routines. It also became clear that, for at least some participating residents, patterns of daily travel in the short run would be changed once it became obvious what was being revealed. In short, time-space allocation is an example of a concept that, on one hand, offers great promise for organizing quantitative data in unique and valuable ways but, on the other, is so demanding in the amount and detail of data required as to severely limit its applicability to real-world studies.

The Validity of Grounded Process

A second major goal of this research was to assess the applicability of the theory of grounded process to examine the changing cultural landscapes in the neighboring *ahupua`a* of Kanaio and A`uahi. To this end, several concepts from different theoretical schools within cultural geography were considered, an intellectual stance criticized in the literature for its lack of philosophical purity (Johnston 1990) and for the absence of some central organizing principle to allow the effective implementation of diverse concepts (Gregory et al 1994, Bird 1989, Norton 1989). The ability of grounded process both to manipulate and control information through the prisms of quite different concepts is seen in the discussion of cultural landscapes in Kanaio-A`uahi, whether traditional or contemporary, pristine or constructed (chapters 3 and 4). Grounded process as an organizing principle and an alternative to the scientific method was the key to the success of this research project. It allowed each concept to be addressed separately and independently, and to yield both methodological and explanatory possibilities for data under examination. This range of concepts, far from offering competing views of intellectual reality, became the means to attain complementary interpretation of the information collected in the field. Consequently there was no support for Johnston's (1990) position that theoretical approaches and their constituent concepts are philosophically exclusive.

In several fortuitous cases, concepts chosen not only provided intellectual alternatives for identifying and refining codes and memos to apprehend the cultural landscapes of Kanaio and A`uahi, but also created a valuable set of checks and balances in the tension between theoretical goals and field realities. This was especially true of the concept of experiential landscapes, which contributed far more to an acknowledgement of how one concept could consume far too much of available research time and much less to discussions about existing cultural landscapes. This emphasizes an important point: that for grounded process to be applied successfully to the study of cultural landscapes, it requires a number of diverse concepts, chosen carefully to reflect theoretical stances that are competitive rather than complementary. Without any such conceptual matrix and any such structure of checks and balances, grounded process can easily become a validation of eloquent preconceptions. It is only by constantly injecting new concepts that continually require major reworking of information contained within existing codes and memos that grounded process exhibits its particular ability to address interpretation, understanding, and explanation in new and exciting ways.

The ultimate goal of grounded process is to specify theoretical statements that not only reflect the overall research experience (figure 2.1) but also represent organizing principles for further cycles of field enquiry and conceptual analysis. As follows:

1. The dynamic nature of cultural landscapes is reflected in the persistence of past representation, or portions of them, into the

present. Cultural landscapes are as much reflections of the past as statements of the present and great depth of both chronological and social time is a necessary condition for their contemporary understanding.

2. Cultural landscapes conceived by competing groups apparently do not exist in isolation. Instead, they interact with each other and often this perceived presence helps shape the actions of competing groups in both the creation of both landscape images and territorial symbols.

3. Discrete cultural landscapes are held by different groups interacting within the two *ahupua`a* of Kanaio and A`uahi. While the physical parameters do not change, the cultural images and symbols with which each group imbues the landscape reflects the values, attitudes, and beliefs central to the wordview and sense of identity of that group.

4. Significant points of congruence in the attitudes of various groups towards Kanaio and A`uahi is not surprising, given that they are interacting within the broader compass of contemporary American culture at the same point in time. What is more striking is the wide divergence of values attached to various places on the cultural landscape and how these lead to major differences in group and personal actions taken towards the landscapes of Kanaio and A`uahi.

5. The results obtained support the initial premise that there exists within the residential population simultaneously in Kanaio-A`uahi an extremely complicated pattern of divergent cultural landscapes. The complexity of these various landscapes reflects both their creation and continuous conflict and struggle about them. All this ferment has occurred within a relatively small area whose physical and social boundaries are unambiguous.

6. No single theoretical approach, its constituent concepts and imbedded methodologies, would have been sufficient to elicit the complexity of cultural landscapes in contemporary Kanaio and A`uahi. Only an intellectual stance able to incorporate concepts of diverse theoretical origin and structured through grounded process could have achieved some comprehensible understanding within the limits of fixed time and finite resources.

Future Examination of the Elephant

A major difficulty in using the theory of grounded process is the absence of closure in research. Given the cyclic nature of data, categories, codes, and memos, enquiries have to be concluded more on the arbitrary basis of cost and time rather than by any rigorous intellectual criteria. Some parts of the elephant, although originally listed at the start of research enquiries, still are poorly known. As noted during the theoretical discussion (chapter 2), grounded process has the continuous ability to highlight new and possibly profitable directions of research throughout the lifeline of a particular project. With respect to the various cultural landscapes and perceptions of place found in Kanaio-A`uahi before, now, and into the future:

1. A careful synthesis of the genealogies of Kanaio and A`uahi residents needs to be completed by building on the detailed work done earlier in the century by E.D. Baldwin and L.J. Watson, among others. The various interrelated families making up the community of Lower Kanaio have compiled a detailed genealogy, which needs to be correlated with records of the probate court, former tax documents, and other archival materials. Given the poor state of existing documentation about Maui from the period of the monarchy this will require a great amount of archival investigation of such manuscript materials as old church records that may still be available, but not for many years more.

2: The homesteads process as it pertains to the two *ahupua`a* of Kanaio and A`uahi, needs similar clarification. For these communities, it remains unclear precisely what was the homestead process, by what means were lands allocated, and what proofs of prior use were offered in support of family claims. Further archival enquiry into records from the late monarchy, republic, and territorial periods into the 1940s to determine both land ownership and loss of access to land became increasingly a contentious issue as this research unfolded. Similarly, this situation has concerned for many years those Kanaio residents intending to make future land claims based on homestead criteria and requirements. During legal hearings, missing but necessary documents may come to light. More properly, a systematic search for missing documents, and a careful synthesis of existing ones, is crucial to understanding how residents' worldviews of Kanaio changed during the 1880-1940 period and how, in turn, this led to the conception of Kanaio-A`uahi land as the Empty Quarter among governmental agencies.

3. The unsolved question, which now appears to be closer to resolution, is what happened to various inhabitants of Kanaio-A`uahi who were present before inmigration occurred during the 1780s and from which the present community of Lower Kanaio claim descent. Their apparent demise or disappearance must relate, in one form or another, to the depopulation of A`uahi. Again, evidence may exist in various archival sources. A recent project by Carol Silva of the State Archives and others to collate and index newspapers published in the Hawaiian language from the 1830s may be one source for these events, perhaps in addition to early church records. Again, this will involve a time consuming search of the archival records but increasingly, detailed knowledge of land access during these early times is critical to resolving contemporary issues for Hawaiian peoples in places like Kanaio-A`uahi.

4. Another use for various early records would be to achieve improved understanding about local values and attitudes towards Kanaio-A`uahi before the 1840s. Specifically, what lies behind the coastal names revealed by Sam Po; a more detailed account of the Pamano legend given its possible centrality to the ritual complex in Kanaio; and what ate the various place names and categories of images that refer to various *heiau* throughout Kanaio and A`uahi.

The lure of Kanaio-A`uahi, its physical beauty and its people will always make the prospect of continuing enquiries seem like leisure rather than work. Resources available from both community members and former residents mean that this particular project

on changing cultural landscapes has uncovered no more than the top layer of a rich lode. Information from field enquiries, combined with archival documents, hopefully have provided clarity and unknown detail to the various perceptions and values that account for the diverse cultural landscapes of two adjacent *ahupua`a* in southeast Maui.