

## Cultural Impact Assessment Study

### Native Hawaiian Cultural Practices, Features, and Beliefs Associated with the University of Hawai'i Mauna Kea Science Reserve Master Plan Project Area

University of Hawai'i Mauna Kea Science Reserve Master Plan  
Mauna Kea Science Reserve and Hale Pōhaku

Lands of Ka'ōhe (Hāmākua District) and  
Humu'ula (Hilo District), Island of Hawai'i

Technical Report for Environmental Impact Study

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Paul H. Rosendahl, Ph.D., Inc.

*Archaeological • Historical • Cultural Resource Management Studies & Services*

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Technical Report for Environmental Impact Study

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# SUMMARY

Consisting of the upper slopes and summit region of Mauna Kea, the University of Hawai'i Mauna Kea Science Reserve is an 11,288 acre parcel of land leased by the University from the State of Hawai'i since 1968 for development and use as a scientific complex devoted to astronomical research. This cultural impact assessment study has been prepared as a technical report for inclusion in the Environmental Impact Statement submitted by the University of Hawai'i in support of the University's Mauna Kea Science Reserve Master Plan. This new master plan is currently being prepared to provide guidance for the use and development of the Science Reserve into the next decades.

The overall objective of the present cultural impact assessment study was to identify any Native Hawaiian cultural practices, features, and beliefs currently associated with the Science Reserve Master Plan project area that might potentially be in some manner constrained, restricted, prohibited, or eliminated if the proposed Master Plan were to be approved. The nature of identified cultural practices addressed was not restricted; that is, claims for all three types of practices – traditional cultural property, traditional and customary cultural practices, and contemporary cultural practices – were identified and considered.

The principal source of information utilized by the present study was the oral history and consultation study carried out by Cultural Resources Specialist Kepâ Maly, who made extensive efforts to identify and contact individuals potentially knowledgeable of Mauna Kea with regard to traditional and customary cultural practices, traditional cultural properties, and contemporary cultural practices. He conducted a total of fifteen recorded interviews with twenty-two different informants, and in the process of carrying out his study consulted with more than 100 individuals, a great number of whom had knowledge about Mauna Kea and were able to provide information which supplemented that obtained during the recorded informant interviews.

The number and variety of individuals and groups contacted and consulted by Maly demonstrates an adequate, appropriate, and reasonable good-faith effort to identify the full range of native Hawaiian cultural practices, features, and beliefs currently associated with the Science Reserve Master Plan project area on Mauna Kea. This documented effort indicates it is likely that the full range of current cultural practices, features, and beliefs associated with the Science Reserve Master Plan project area has been identified, even though in many instances only the general nature of these practices, features, and beliefs has been determined but not documented in any great detail.

Based on an evaluation of the findings of the present cultural impact assessment study, it is believed that with minor exceptions, most of the native Hawaiian cultural practices, features, and beliefs identified as being currently associated with the Mauna Kea Science Reserve Master Plan project area can be considered to be culturally and historically significant. Most, if not all, of the identified practices and beliefs would seem to qualify as traditional and customary cultural practices, while the principal *pu'u* (Kukahau'ula, Lilinoe) and the shallow lake with adjacent *pu'u* (Waiiau) would seem to satisfy the criteria for being regarded as legitimate traditional cultural properties. Finally, none of the identified practices and beliefs would seem to represent strictly contemporary cultural practices or beliefs lacking some measure of traditional connection.

Based on an evaluation of the Native Hawaiian cultural practices, features, and beliefs identified as currently associated with the Mauna Kea Science Reserve Master Plan project area, and a general consideration of the potentially adverse direct and indirect effects that might result from future development and use of the summit region, it is obvious that a comprehensive plan for both the short-term and long-term management of the Science Reserve Master Plan project area is vital for the protection and preservation of significant traditional cultural resources. The Master Plan minimizes potential direct and indirect impacts to cultural practices, features and beliefs through the careful limits set upon future development within the proposed Astronomy Precinct and restrictive design guidelines. The Management Plan proposes specific necessary actions to protect the cultural resources and traditional cultural access rights and uses.

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# INTRODUCTION

Consisting of the upper slopes and summit region of Mauna Kea, the Mauna Kea Science Reserve is an 11,288 acre parcel of land leased by the University of Hawai'i from the State of Hawai'i since 1968 for development and use as a scientific complex devoted to astronomical research. In 1983, the University of Hawai'i adopted a complex development plan, the Mauna Kea Science Reserve Complex Development Plan, which projected development to the year 2000 and which has provided guidance for the use and development of the science reserve up to the present. To provide guidance into the next decades, a new master plan is currently being prepared by the Honolulu firm of Group 70 International for the University of Hawai'i; the Mauna Kea Science Reserve Master Plan (1999) for continued complex development incorporates the major directions and recommendations proposed by the University of Hawai'i's Mauna Kea Advisory Committee and Group 70.

## STUDY IDENTIFICATION

The present cultural impact assessment study has been prepared as a supporting technical report for an appropriate Environmental Impact Statement (EIS) (In prep.) being prepared by Group 70 for the University of Hawai'i in connection with the Master Plan in accordance with "Chapter 343 - Environmental Impact Statements" (Haw.Rev.Stat.) and "Title 11, Chapter 200 - Environmental Impact Statement Rules" (Haw.Admin. Rules, Dept. Health). The basic purposes of the EIS are two-fold: (a) to permit adequate consideration of the potential environmental, social, and economic consequences of the proposed project; and (b) to provide for public participation in the planning of the project (OEQC 1997a:4).

## STUDY PURPOSE

### *General Purpose*

The general purpose of the present cultural impact assessment study would be to assess the potential impacts of the proposed complex development plan of the University of Hawai'i Mauna Kea Science Reserve Master Plan upon the cultural resources of the upper slopes and summit region of Mauna Kea in accordance with general guidance provided by OEQC guidelines for cultural impact assessment (OEQC 1997b). Generally speaking, cultural resources include a broad range of often overlapping categories of cultural items - places, behaviors, values, beliefs, objects, records, stories, and so on. For the purpose of this cultural impact assessment study, cultural resources would be defined more specifically as the cultural practices, features, and beliefs of Native Hawaiians that are associated with the defined University of Hawai'i Mauna Kea Science Reserve Master Plan project area atop Mauna Kea on the Island of Hawai'i.

One specific type of cultural resource that falls within the purview of the historic preservation review process is called a "traditional cultural property" (TCP). A traditional cultural property is a historic property or place that is important because it possesses "traditional cultural significance":

"Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. . . .

A traditional cultural property, then, can be defined generally as one that is...[important/significant]. . . because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1990:1).

In addition, it is important to realize that sometimes a traditional cultural property may not have a visible physical manifestation:

Although many traditional cultural properties have physical manifestations that anyone walking across the surface of the earth can see, others do not have this kind of visibility, and more important, the meaning, the historical importance of most traditional cultural properties can only be evaluated in terms of the oral history of the community (Sebastian 1993:22).

Two significant differences distinguish traditional cultural properties as a subset within the larger sphere of cultural resources. First, while cultural resources such as practices and beliefs may be spatially associated with general types of geographical areas, such as the upper slopes of Mauna Kea, a traditional cultural property is a specific physical entity or feature with a definable boundary, such as a specific cinder cone, or *pu'u*, situated on the upper slopes of Mauna Kea. Second, while cultural resources such as practices and beliefs can include general cultural behaviors such as the use of a general area for the collection of natural resources, meditation and ceremonial purposes, or the conduct of religious activities, a traditional cultural property is a specific place or feature directly associated with specific cultural behaviors, the continuity of which over time can be demonstrated.

Given these two significant distinctions, there are three types of practitioner claims relating to cultural practices, beliefs, and features that are likely to be encountered in the course of conducting a cultural impact assessment study. These claims can be referred to as (a) traditional cultural property claims, (b) traditional and customary cultural practice claims, and (c) contemporary (or neo-traditional) cultural practice claims.

*Traditional cultural property claims* would be those which lie within the purview of the historic preservation review process; that is, they are claims involving the traditional practices and beliefs of a local ethnic community or members of that community that (a) are associated with a definable physical property (and entity such as a site, building, structure, object, or district), (b) are founded in the history of the local community, (c) contribute to the maintenance of the cultural identity of the community, and (d) demonstrate a historical continuity of practice or belief up to the present – through either actual practice or historical documentation (including both written and oral historical sources). Furthermore, a potential traditional cultural property must have demonstrable historical significance in terms of established evaluation criteria, such as those of the National Register of Historic Places and/or the Hawai'i Register of Historic Places, to qualify as a legitimate traditional cultural property within the historic preservation context.

*Traditional and customary cultural practice claims* would be those which lie within the purview of Article XII, Section 7, of the Hawai'i State Constitution ("Traditional and Customary Rights"), and various other state laws and court rulings, particularly as reaffirmed in 1995 by the Hawai'i State Supreme Court in the decision commonly referred to as the "PASH decision," and as further clarified more recently in its 1998 decision in *State of Hawai'i v. Alapai Hanapi*. The notable points of the decisions in PASH and in *Hanapi* can be summarized as follows: (a) the reasonable exercise of ancient Native Hawaiian usage is entitled to protection under Article XII, Section 7, of the Hawai'i State Constitution; and (b) those persons claiming their conduct is constitutionally protected must prove that they are a Native Hawaiian as defined in PASH, that the claimed right is constitutionally protected as a traditional and customary Native Hawaiian practice, and that the exercise of the right is occurring on undeveloped or less than fully developed property.

While traditional cultural property claims, as defined above, would certainly fall within the general domain of traditional and customary cultural practice claims, not all traditional and customary cultural practice claims would necessarily qualify as traditional and customary cultural property claims. Traditional and customary cultural practice claims subsume a broad range of cultural practices and beliefs associated with a general geographical area or region, rather than a clearly definable property or site – for example, the gathering of various plant products from an upland or forest area for traditional subsistence or ceremonial purposes, in contrast to the gathering of a specific plant species for a specific use by current generation members of a family that had obtained the same plant from the same recognized site for several generations.

*Contemporary, or “neo-traditional”, cultural practice claims* do not necessarily overlap with either traditional property claims or traditional and customary practice claims. Contemporary cultural practice claims would be those made by cultural practitioners relating to current practices or beliefs for which no clear specific basis in traditional culture can be clearly established or demonstrated – for example, the conducting of ritual ceremonies at sites or features for which no such prior traditional use and associated beliefs can be demonstrated. In some cases, however, it may be possible to demonstrate the reasonable evolutionary development of a contemporary practice from an earlier traditional practice.

### ***Specific Purpose and Objectives***

The specific purpose of the present cultural impact assessment study was to assess the potential effects of the proposed Complex Development Plan of the University of Hawai‘i – Institute for Astronomy (UH-IfA) upon Native Hawaiian cultural practices (including features and beliefs) associated with the defined University of Hawai‘i Mauna Kea Science Reserve Master Plan project area atop Mauna Kea on the Island of Hawai‘i. To accomplish this purpose, the following specific objectives were established:

1. Identify any traditional Native Hawaiian cultural practices currently being conducted by individual cultural practitioners or groups;
2. Collect information sufficient to define and document the nature, location, and authenticity of identified traditional cultural practices and practitioners or groups;
3. Assess potential impacts of the current project upon identified traditional cultural practices; and
4. Recommend appropriate mitigation measures for any potentially adverse effects upon identified traditional cultural practices.

Thus, the overall goal or objective of the present cultural impact assessment study was to identify any Native Hawaiian cultural practices currently being conducted within the defined project area that might potentially be in some manner constrained, restricted, prohibited, or eliminated if the proposed UH-IfA project were to be approved. The nature of identified cultural practices would not be restricted; that is, claims for all three types practices – traditional cultural property, traditional and customary cultural practices, and contemporary cultural practices – would be identified and considered.

## **CULTURAL IMPACT ASSESSMENT AND OEQC GUIDELINES**

### ***Background***

To understand the cultural impact assessment issue, particularly as it is addressed in the present study, a concise consideration of the intent and evolution of the OEQC guidelines is necessary. The guidelines evolved out of what are commonly referred to as “PASH/Kohanaiki” issues – issues relating to Native Hawaiian traditional and customary access and land use rights as they were reasserted by a State Supreme Court decision



in August 1995 and further clarified in its 1998 decision in *State v. Hanapi* – and the need for appropriate means to address these issues within the State environmental impact review process. For a good discussion of the issues and options involved, the recently completed “Report on Native Hawaiian Traditional and Customary Practices Following the Opinion of the Supreme Court of the State of Hawai‘i in Public Access Shoreline Hawai‘i vs. Hawai‘i County Planning Commission” prepared by the PASH/Kohanaiki Study Group (1998) should be consulted.

Initial attempts to address various issues relating to Native Hawaiian traditional and customary access and land use rights within the framework of the State environmental impact review process were made in the form of proposed changes to the State EIS law as contained in Chapter 343 (HRS). These attempts to require a formal cultural impact assessment failed to pass the State legislature in 1996 and 1997.

A subsequent, second attempt to address various issues relating to Native Hawaiian traditional and customary access and land use rights was made in the form of proposed changes in the “Administrative Rules” for compliance with Chapt. 343 (DOH Title 11, Chapt. 200). This attempt to require an explicitly defined cultural impact assessment also failed, as the governor declined to approve the proposed amendments.

The third attempt to address various issues relating to Native Hawaiian traditional and customary access and land use rights within the State environmental impact review process has resulted in the current OEQC “Guidelines for Assessing Cultural Impacts” (OEQC 1997b). Draft guidelines were initially issued for public review and comment on September 8, 1997. The guidelines in their final form were formally adopted by the Environmental Council on November 19, 1997.

The relationship of the OEQC guidelines to the State Supreme Court “PASH” decision was clearly stated on front page of the September 8, 1997 issue of the OEQC bulletin, *The Environmental Notice*, when the draft guidelines were first issued for public review and comment:

For years, a controversy has simmered over developer’s responsibility to perform a “Cultural Impact Study” prior to building a project. The recent Supreme Court “PASH” decision reaffirmed the state’s duty to protect the gathering rights of Native Hawaiians. In light of these events, the Environmental Council has drafted a guidance document to provide clarity on when and how to assess a project’s impacts on the cultural practices of host communities.

It should be noted that the guidelines for cultural impact assessment are meant to include consideration of all the different groups comprising the multi-ethnic community of Hawaii; however, this inclusiveness is generally understated, and the clear emphasis is meant to be upon aspects of Native Hawaiian culture.

More than 20 letters were received by OEQC in response to the publication of the draft guidelines, and relevant comments were said to have been incorporated into a final version of the guidelines (OEQC n.d.). The final guidelines (OEQC 1997b) were formally adopted by the Environmental Council on November 19, 1997. The final guidelines are virtually identical to the draft guidelines initially published on September 8, 1997, and the degree to which any of the received comments on the draft guidelines were considered prior to issuance of the final guidelines is uncertain. In fact, the overall process through which the guidelines were prepared and adopted brings out several important questions relating to such topics as (a) the source or basis utilized for the content of the guidelines, (b) the background and qualifications of the preparer(s) of the guidelines, (c) the criteria to be used for the adequacy of cultural impact assessment studies prepared in response to the guidelines, and (d) the legal question of how compliance can be required when the standards are guidelines.

According to the Chair’s Report contained in The 1997 Annual Report of the Environmental Council, the guidelines were drafted by the Cultural Impacts Committee:

The Committee drafted guidelines recommending a methodology to assess the impact of proposed actions on cultural resources, including Native Hawaiian cultural resources, values, and beliefs. The guidelines also specify the contents of a cultural impact assessment.

To prepare the Guidelines, the Committee reviewed public testimony and solicited input from interested parties. Expertise from the DLNR's Historic Preservation Division as well as Federal regulations governing the "Protection of Historic Properties" were used to model the draft guidelines.

The draft cultural impact guidelines were published for review and comment in the Sept. 8 Environmental Notice, and over 20 letters were received. Relevant comments were incorporated into a final draft versions of the guidelines, which were adopted as a policy document by the Environmental Council on November 19, 1997 (OEQC n.d.:5).

Direct inquiries to OEQC (Gary Gill, Director) and SHPD (Dr. Holly McEldowney, Staff Specialist in the History and Culture Branch) provided additional background information relating to the formulation of the cultural impact assessment guidelines. The principal author or compiler of the guidelines was Arnold Lum, Esq., a member of the Environmental Council's Cultural Impacts Committee, and also a staff attorney at the Native Hawaiian Legal Corporation. OEQC staff also assisted in the preparation of the guidelines. Several internal drafts were prepared, reviewed, and revised. Preparation of the guidelines relied to some degree upon National Register Bulletin No. 38, "Guidelines for Evaluating and Documenting Traditional Cultural Properties" (Parker and King 1990) for basic content information. Other sources, including the SHPD draft rules for conducting ethnographic surveys and dealing with traditional cultural properties (DLNR n.d.), were consulted; in fact, a copy of the SHPD draft rules was provided to OEQC and the Cultural Impacts Committee by SHPD Administrator, Dr. Don Hibbard. Professional staff in the SHPD - History and Culture Branch took part in the preparation and review of the guidelines. Certainly the inclusion of such professional anthropological and historical expertise in the preparation of the guidelines was appropriate; however, much of the professional advice on the extent to which detailed expectations - regarding study scope, content, methodology, documentation, and impact assessment - should be explicitly addressed in the guidelines was apparently discounted.

## **Discussion**

The OEQC guidelines consist of three basic sections. The first section is an introduction which notes the various statutory and other bases for addressing potential impacts upon cultural resources within the context of the environmental assessment review process, and "...encourages preparers of environmental assessments and environmental impact statements to analyze the impact of a proposed action on cultural practices and features associated with the project area" (OEQC 1997:1). The second section of the guidelines discusses methodological considerations for conducting cultural impact assessments, and presents a recommended six-step protocol to be followed by the assessment preparers. The third section of the guidelines outlines eleven topics or "matters" that a cultural assessment should address; these topics basically represent the proposed or desired content and organization of a cultural impact assessment report.

As "guidelines", the OEQC guidelines would seem to have neither the specific statutory authority of law, nor the regulatory authority of administrative rules. As guidelines, they should be regarded as providing general guidance; that is, they represent suggestions and recommendations as to how to approach the assessment of potential cultural impacts. The guidelines provide little or no guidance relative to many important questions, perhaps the most significant of which would be the following:

1. How would project-specific determinations be made as to whether or not a cultural impact assessment study might even be necessary or appropriate, given the specific nature and location of a proposed project;
2. If a cultural impact assessment study is to be conducted, how does one determine what would constitute an appropriate project-specific level of effort – that is, the general scope of work or objectives for the study, and the specific tasks or activities required to accomplish successfully the scope of work or objectives;
3. What criteria are to be used for determining the credibility and reliability of potential cultural information sources (generally referred to as “informants” or “knowledgeable individuals”);
4. If specific cultural practices, beliefs, or features are definitely identified as being associated with a project area, what criteria are to be applied for evaluating (a) the descriptive adequacy and (b) the cultural authenticity of the identified practices, beliefs, or features;
5. If specific culturally authentic practices, beliefs, or features are definitely identified as being associated with a project area, what criteria are to be used for assessing the nature and extent of potential impacts of a proposed project on the identified practices, beliefs, or features – “no effect”, “no adverse effect”, and/or “adverse effect”;
6. If a project were determined to have potentially adverse effects upon specific identified, culturally authentic practices, beliefs, or features, what criteria are to be used for evaluating the adequacy and appropriateness of alternative potential mitigation actions;
7. The review and acceptance or rejection of a completed cultural impact assessment study would legitimately fall within the purview of what regulatory office or agency; and
8. What standards or criteria are to be used to evaluate the overall adequacy or acceptability of a completed cultural impact assessment study?

Consideration of these questions, and their implicit implications, would have direct relevance to cultural impact assessment studies. These implications relate most importantly to (a) the level of study effort believed appropriate for the project-specific context, and (b) the rationale adopted for both the study overall, as well as for the identification and evaluation of identified cultural practice claims, the assessment of potential project-specific impacts, and the formulation of any specific recommendations for further study or other actions.

## **PRESENT STUDY SCOPE**

### ***Level of Study Effort and Rationale for Approach***

Determination of the level of study effort appropriate in any project-specific context should involve the consideration of several factors, including the following:

1. Probable significance and number of known or suspected traditional cultural properties, features, practices, or beliefs within or related to the specific project area;
2. Potential number of individuals (potential informants) knowledgeable of the specific project area;
3. Availability of historical and cultural information on the specific project area or immediately adjacent lands;
4. Size, configuration, and natural history of the specific project area; and
5. Potential effects of the project on known or expected traditional cultural properties, features, practices, or beliefs within or related to the specific project area.

In some instances, consideration of these factors within the specific nature and context of a project might indicate that the most appropriate level of study for an adequate assessment of potential cultural impacts would be that which could be characterized as an identification study. The distinctive characteristics of an identification study are that it would be limited to (a) the identification of Native Hawaiian cultural practices currently being conducted by individual cultural practitioners or groups, and (b) the collection of information minimally sufficient so as to define the general nature, location, and likely authenticity of identified cultural practices. An identification study is believed to comprise a reasonable approach for the assessment of potential cultural impacts when the potential for a project to result in adverse impacts upon any current Native Hawaiian cultural practices, beliefs, or features would seem likely to be minimal or indeterminate; that is, given the specific details of a proposed project, it would be very unlikely that the continued exercise of any current practices would be in any way restricted, constrained, prohibited, or eliminated.

An identification study would not involve the considerably greater level of effort – both calendar months and hours of labor – needed to carry out what could be characterized as a documentation study. The distinctive characteristics of the latter, more commonly be referred to as a full ethnographic or oral history study would be (a) the collection of detailed information regarding identified Native Hawaiian cultural practices by means of formal oral history interviews which are usually tape recorded and transcribed, and (b) the analysis and synthesis of all collected data – from interviews, as well as relevant historical documentary and archival research – within the general cultural-historical context of traditional Native Hawaiian culture and the defined specific geographical area of a specific project.

The overall rationale guiding the present study has been that the level of study effort should be commensurate with the potential of the proposed project for making any adverse impacts upon any Native Hawaiian cultural practices currently conducted by cultural practitioners within the Science Reserve Complex Development Plan project area. Because the proposed project was believed likely to have potentially adverse impacts, the level of study effort referred to as a documentation study, or a full ethnographic or oral history study, was determined to be appropriate. Proposed future development within the Science Reserve Complex Development Plan project area would involve construction and operation of substantial and widespread, or dispersed, astronomy facilities and related support facilities and infrastructure, and would appear to have significant potential for both direct and indirect effects of short-term and long-term duration on current Native Hawaiian cultural practices associated with the project area.

Therefore, intensive efforts were made to seek out and interview knowledgeable informants and cultural practitioners in an effort to identify and document traditional and customary practices, traditional cultural properties, and contemporary cultural practices associated with the project area so that adequate and appropriate mitigation measures might be developed to minimize or eliminate adverse effects upon existing Native Hawaiian cultural practices, features, and beliefs. Adequate identification and documentation for the present study entailed considerable efforts to interview knowledgeable informants and cultural practitioners in order to collect and record the details of identified cultural practices, features, and beliefs. The study did not,

however, make any exhaustive efforts to evaluate the authenticity of identified cultural practices, or to determine whether such practices represented more recently established contemporary cultural practices rather than traditional and customary cultural practices. This position was taken for two reasons: (a) disagreement or argument with informants and practitioners as to the cultural authenticity of specific practices, features, or beliefs would seem to be both insensitive and presumptuous; and (b) efforts made to minimize or avoid potentially adverse effects upon identified Native Hawaiian cultural practices, features, and beliefs would seem to be the more productive and appropriate course of action.

### ***Specific Scope and Work Tasks***

While the specific purpose of the cultural impact assessment study was to assess the potential effects of the proposed Complex Development Plan of the University of Hawai'i - Institute for Astronomy (UH-IFA) upon Native Hawaiian cultural practices (including features and beliefs) associated with the defined University of Hawai'i Mauna Kea Science Reserve Master Plan project area, the specific scope and work tasks of the study were defined by several assumptions, constraints, and limitations. In order to accomplish the specific purpose and objectives outlined for the present study, the following specific tasks were formulated:

1. Review available historical documentary, traditional cultural property, and archaeological background research;
2. Review and evaluate available oral history informant interview summary and transcripts;
3. Prepare an appropriate cultural impact assessment report; and
4. Consult and coordinate with client and client representatives, regulatory agencies, advisory groups, and any other individuals or groups as necessary and/or appropriate.

### ***Assumptions, Constraints, and Limitations***

At the direction of the client and with the agreement of the SHPD, the present cultural impact assessment study was carried out in accordance with two specific assumptions that would constrain and limit the scope of work and tasks. First, no additional or new historical documentary, traditional cultural property, and archaeological background research would be conducted. Background review would utilize only available materials, particularly recently prepared ones, including (a) an archival literature research overview and oral history report prepared for the present Complex Development Plan project by independent Cultural Resources Specialist Kepā Maly (Maly 1999), (b) a compilation of traditional cultural property and current cultural uses information prepared by SHPD History and Culture Specialist H. McEldowney, (c) an archaeological inventory survey report prepared by SHPD Staff Archaeologist P. McCoy, and (d) a comprehensive historic preservation plan for the Mauna Kea Science Reserve prepared by SHPD staff (DLNR In prep.). Secondly, no additional oral history informant interview work was to be conducted. Review and evaluation of local informant interviews would utilize the available summaries and transcripts of the oral history interviews recently completed by independent Cultural Resources Specialist Kepā Maly (Maly 1999).

As indicated by the recent audit report on the management of Mauna Kea and the Mauna Kea Science Reserve (Auditor 1998), the protection and management of the natural resources of Mauna Kea, including the cultural resources, has generally been less than adequate. While several more or less comprehensive plans and reports for management and development have been prepared over the years since 1977, implementation of proposed measures to protect and manage significant natural resources has generally been weak; more specifically, the audit determined that historical preservation concerns had been neglected, and cultural preservation concerns largely unrecognized (Auditor 1998:15-23).

During the period 1986-1993, numerous discussions apparently took place between the University of Hawai'i and DLNR regarding the preparation of a historic preservation plan for the identification, protection, and management of historic properties on Mauna Kea and in the Mauna Kea Science Reserve. A detailed scope of work for the preparation of a historic preservation management plan (DLNR 1993) was finally completed and approved in 1993, and archaeological survey field work related to the preparation of the plan was subsequently carried out between 1995 and 1997 (McCoy 1999).

In February 1999, the University of Hawai'i and DLNR executed a formal Memorandum of Agreement under which the University would provide financial support to DLNR for the preparation by SHPD of a historic preservation management plan for Mauna Kea. This agreement, which incorporated the approved 1993 scope of work, called for DLNR to complete and submit a final plan within nine months (i.e., by the end of October 1999), with draft versions of different component sections of the plan to be completed and submitted within six months (i.e., by the end of July 1999).

A detailed outline for the organization and content of the historic preservation plan had been previously prepared by SHPD and finalized in December 1998. This outline conceptualized a comprehensive plan consisting of two essential major components: (a) an information component which described the significant historic properties of Mauna Kea and the Mauna Kea Science Reserve, and (b) a management component which identified potential impacts of proposed development and appropriate measures through which potentially adverse effects could be avoided or mitigated.

The information component of the historic preservation plan was organized to address the following topics:

1. Introduction, including plan objectives and background, geographic areas to be covered, and operational jurisdictions (applicable State and Federal laws and policies);
2. Environmental Setting;
3. Cultural-Historical Background, including overview of social-political context, prehistoric and early historic land use patterns (to 1850) of the summit region and Hale Pōhaku/mid-elevation forest zone, and historic period land use patterns of the summit region and Hale Pōhaku (c. 1830s to 1960);
4. Historic Property Inventory, including history and extent of past archaeological survey coverage, and results (property types, distribution patterns, analysis, traditional cultural properties);
5. Evaluations and Eligibility for the National Register, including definition of a Summit Region Historic District, and discussions of Kalepamoā Area (Hale Pōhaku area) historic properties and the Mauna Kea Adze Quarry);
6. Land Uses, Potential Threats, and Regulated Activities; and
7. Jurisdictions.

The management component of the historic preservation plan was organized to address the following topics:

1. Plans for Specific Development Projects and Related Activities, including maintenance and routine operations, and proposed development and construction projects, in terms of potential direct and indirect adverse effects, and proposed mitigation measures to avoid or minimize adverse effects; and
2. Long-Term Management Plan for Historic Properties within the Science Reserve, including plans for interpretive development, monitoring, routine consultation with Native Hawaiian organizations and individuals, cultural uses, and continued inventory of historic properties.

In addition to a Reference section and a Glossary of terms used in the plan, the historic preservation plan was to incorporate five technical Appendices:

1. Report of Archaeological Surveys Conducted by DLNR (1995 to 1997), including survey methods, areas covered, relocation of previously identified sites, and survey results;
2. Catalogue of Historic Properties, including descriptions of all historic properties identified between 1982 and 1997;
3. Annotated Bibliography of Archaeological and Related Studies in the Mauna Kea Science Reserve and Mauna Kea, including all archaeological studies and related scientific studies;
4. Annotated Bibliography of Historic and Ethnographic References to Mauna Kea, including associated cultural references (myths, legends, and traditions), historic period accounts of the upper regions, and historic period land use records of areas; and
5. Annotated List of Applicable Historic Preservation Laws and Regulations.

The scope of work and level of preparation effort agreed upon for the present cultural impact assessment study were formulated with the understanding and assumption that draft versions of major substantive sections of the historic preservation plan being prepared by DLNR would be available and would be utilized extensively in the preparation of the present cultural impact assessment study. With the exception of a detailed content outline and partial draft discussion of the management component of the historic preservation plan, and a draft summary inventory of archaeological sites identified within the Science Reserve (including short descriptions of individual sites), these expectations had not been fulfilled as of early August 1999.

This situation has resulted in limitations to the present study report, which have been dealt with as follows. First, intended overview sections on cultural-historical background and archaeology have been replaced by a single cultural-historical-archaeological overview section that has been taken from, with minor changes, the *Mauna Kea Science Reserve Master Plan - Draft #3* (Group 70 International 1999:V-1 thru 10). Second, an intended section on the proposed Mauna Kea Summit Region Historic District has been replaced by a short summary prepared on the basis of discussions with SHPD staff, and two draft maps provided by SHPD staff.

While these limitations have altered somewhat the original intended scope of the present study report, they do not prevent an adequate identification and evaluation of Native Hawaiian cultural practices, features, and beliefs associated with the Mauna Kea Science Reserve Complex Development Plan project area. Information sufficient for such identification and evaluation is provided by the oral history study and archival literature research report conducted by Kepā Maly (1999), and supported by additional documentary sources.

## STUDY METHODOLOGY

### **Guidance Documents**

Several documentary references were consulted and utilized for general guidance in the preparation of the present cultural impact assessment study. The principal sources were the following:

1. The recently adopted OEQC "Guidelines for Assessing Cultural Impacts" (OEQC 1997);
2. The "Native Hawaiian Rights Handbook" (MacKenzie 1991), and more specifically the discussions of traditional and customary rights contained in the chapters on access rights (Lucas 1991a), gathering rights (Lucas 1991b), religious freedom (Kau and MacKenzie 1991), and burial rights (Ayau 1991);
3. The recently completed "Report on Native Hawaiian Traditional and Customary Practices Following the Opinion of the Supreme Court of the State of Hawai'i in Public Access Shoreline Hawai'i v. Hawai'i County Planning Commission" prepared by the PASH/Kohanaiki Study Group (1998);
4. The Federal regulations of the Advisory Council on Historic Preservation for the National Register of Historic Places (CFR 1981) and the "Protection of Historic Properties" (CFR 1986);
5. National Register Bulletin No. 38, "Guidelines for Evaluating and Documenting Traditional Cultural Properties" (Parker and King 1990); and
6. Recent versions of the State Historic Preservation Division (SHPD) draft administrative rules, including Chapter 275 - "Rules Governing Procedures for Historic Preservation Review for Governmental Projects Covered Under Sections 6E-7 and 6E-8, HRS" (DLNR 1998), and Chapter 284 - "Rules Governing Procedures for Ethnographic Inventory Surveys, Treatment of Traditional Cultural Properties, and Historical Data Recovery" (DLNR n.d.).

While the general nature and content of the first three referenced sources are self-explanatory, further comment should be made regarding the final three items. In the absence of any formally adopted administrative rules, the State Historic Preservation Division (SHPD) currently utilizes National Register Bulletin No. 38 (Parker and King 1990) as its principal source of guidance for reviewing and evaluating the adequacy and acceptability of traditional cultural property study reports prepared in connection with various permit applications for which SHPD regulatory review is required. Bulletin No. 38 provides detailed guidance for the assessment of traditional cultural properties within the framework of the National Register significance criteria evaluation process (NPS 1990).

The SHPD draft administrative rules relating to ethnographic surveys and traditional cultural properties (DLNR n.d.) have existed in finalized draft version since at least early 1997; however, they have never been circulated openly, much less formally provided for public review, comment, and eventual adoption by the Department of Land and Natural Resources. This situation is unfortunate because the draft rules go well beyond National Register Bulletin No. 38 in providing detailed guidance for conducting traditional cultural property studies, and more specifically for dealing with the identification, evaluation, and documentation of Native Hawaiian traditional cultural properties and their associated cultural practices and beliefs.



In the absence of any formally adopted administrative rules, SHPD can also be said to basically follow the Federal regulations of the Advisory Council on Historic Preservation for guidance in the evaluation of significance – as contained in Section 60.4 (“Criteria for evaluation”) of the “National Register of Historic Places (CFR 1981), and for guidance in the assessment of potential effects – as contained in Section 800.9 (“Criteria of effect and adverse effect”) of the “Protection of Historic Properties” (CFR 1986).

### Information Sources

The principal source of information utilized by the present study was the oral history and consultation study carried out by Kepā Maly (1999). Maly made extensive efforts to identify and contact individuals potentially knowledgeable of Mauna Kea with regard to traditional and customary cultural practices, traditional cultural properties, and contemporary cultural practices. *Table 1* summarizes the background and qualifications of the knowledgeable informants and cultural practitioners whose interviews were used as the basis for Maly’s report:

In the period between September 25th to December 21st, 1998, Maly...conducted a total of fifteen tape recorded and supplemental interviews with twenty-two participants. The interviews were transcribed and returned to each of the interviewees and follow up discussions were conducted to review each of the typed draft-transcripts. The latter process resulted in the recording of additional narratives with several interviewees... Additionally, three historic interviews (recorded between 1956 to 1967) were translated from Hawaiian to English...and transcribed. With those interviews, representing three primary interweaves, the total number of interviewees represented in [Maly’s] study is twenty-five (Maly 1999:ii).

**Table 1. Interviewee Background: Summary of Informants and Identified Cultural Practitioners \***

**Previously Recorded Interviews:**

Name of Interviewee	Ethnicity	Year Born	Birth Place	Male (M) Female (F)	Place of Residence	Comments
Kaleohano Kalili	Hawaiian	ca. 1884	n/a	M	Honolulu	1956 participant in Bishop Museum interview.
James Kahalelaumāmane Lindsey	Hawaiian	1882	Waimea Hawai'i	M	Waimea	1966 participant in family interview.
Kalani Ka'apuni Phillips	Hawaiian	1902	Waimea Hawai'i	F	Waimea	1967 participant in family interview.

**Interviews of 1998:**

Name of Interviewee	Ethnicity	Year Born	Birth Place	Male (M) Female (F)	Place of Residence	Comments
Toshi Imoto	Japanese	1928	Pu'u 'Ō'ō	M	Pāpa'ikou	Retired Cowboy.
John Ah San	Chinese-Portuguese	1907	Laupāhoehoe	M	Laupāhoehoe	Retired Mauna Kea Forestry employee.
Coco Hind	Part Hawaiian	1923	Honolulu (Raised in Waimea)	F	Hōlualoa	Descendant of Hawaiian ranching family.

\*from Maly (1999)

**Table 1. Interviewee Background (continued)**

Name of Interviewee	Ethnicity	Year Born	Birth Place	Male (M) Female (F)	Place of Residence	Comments
Teddy Bell	Part Hawaiian	1923	Waimea	M	Waimea	Retired Cowboy and Construction worker.
Sonny Kaniho	Part Hawaiian	1922	Kawaihae uka	M	Waimea	Retired Cowboy.
Daniel Kaniho Sr.	Part Hawaiian	1932	Waimea	M	Waimea	Retired Cowboy.
Judge Martin Pence	Caucasian	1904	Kansas	M	Honolulu	Federal Judge; Mauna Kea Hunter.
Pete L'Orange	Part Hawaiian	1933	Waipahu	M	Waimea	Retired Parker Ranch/Humu'ula Manager; Land Use Planner.
Alika Lancaster	Part Hawaiian	1930	Hilo	M	Keaukaha	Mason; Hawai'i Loa Descendant; Hawaiian practitioner.
Anita (Kamaka'ala-Poli'ahu) Lancaster	Part Hawaiian	1942	Moloka'i	F	Keaukaha	Poli'ahu-Hawai'i Loa descendant.
Tita Spielman	Part Hawaiian	1924	Waiākea	F	'Ōuli	Parker-Low family descendant.
J.K. Spielman	Part Hawaiian	1959	Honolulu	M	'Ōuli	Son of Tita Spielman; fisherman.
Hannah Kihalani Springer	Part Hawaiian	1952	Kona	F	Ka'ūpūlehu	Hawaiian Practitioner; historian; OHA Trustee.
Albert Kahiwhiwaokalani Haa Sr.	Hawaiian	1930	Kapoho	M	Waiākea	Retired from Military and State Corrections program; Hawaiian ranching family with ties to Mauna Kea.
Albert K. Haa Jr.	Part Hawaiian	1953	Honolulu	M	Waiākea	Son of A. Haa Sr.; Hawaiian Practitioner.
Lloyd Case	Part Hawaiian	1949	Waimea	M	Waimea	Construction worker; Hawaiian practitioner; and subsistence hunter.
Pualani Kanaka'ole-Kanahelē	Hawaiian	1937	Hilo	F	Pana'ewa	Hawaiian Educator, cultural practitioner; Ho'opa'a Kumu Hula.
Irene Lindsey-Fergerstrom & Romona Fergerstrom-Kalalau and family members	Part Hawaiian	1932 1960	Waimea	F F	Waimea	Descendants of families with generations of practice on Mauna Kea.

In the course of conducting his oral history research, Maly attempted to contact and evaluate as many knowledgeable informants and cultural practitioners as possible:

[D]uring the process of preparing for, and conducting the formal recorded interviews, [Maly] spoke with more than 100 individuals who were known to him, or were identified as: (1) having knowledge about Mauna Kea; (2) knowing someone who could be a potential interviewee; or (3) who represented Native Hawaiian organizations...with interest in Mauna Kea. Several of those contacts resulted in the recording of informal documentation regarding Mauna Kea, or generated written responses as formal communications (Maly 1999:ii-iii).

Other sources of information consulted were various historical documentary and cultural studies, archaeological reports, and management reports pertaining to Mauna Kea. The principal additional references consulted included *A Social Impact Assessment: Indigenous Hawaiian Cultural Values of the Proposed Saddle Road Alignments* (Kanahele and Kanahele n.d.), *Supplement to Archaeological, Historical, and Traditional Cultural Property Assessment for the Hawai'i Defense Access Road...and Saddle Road...Project* (Langlas 1998), *Mauna Kea - Kuahiwi Ku Ha'o I Ka Malie: A Report on Archival and Documentary Research* (Maly 1998), *Archaeological and Historical Literature Search and Research Design: Lava Flow Control Study, Hilo, Hawai'i* (McEldowney 1979), *Report 1. Ethnographic Background of the Mauna Kea Summit Region* (McEldowney 1982), *A Regional Synthesis of Hamakua District* (Cordy 1994), several archaeological paper and reports by P.C. McCoy (1977, 1978, 1981, 1982, 1984a, 1984b, 1986, 1990, 1997, 1999a, 1999b, Ms.), *Revised Management Plan for the UH Management Areas on Mauna Kea* (DLNR and UH-IfA 1995), and *Mauna Kea Science Reserve Master Plan - Draft #3* (Group 70 International 1999).

# UNIVERSITY OF HAWAI'I MAUNA KEA SCIENCE RESERVE MASTER PLAN

The following project description section summarizes project background and setting, and the major physical and master plan components of the University of Hawai'i Science Reserve Master Plan in connection with which the present cultural impact assessment study has been prepared. The principal source from which the following has been adapted is the *Mauna Kea Science Reserve Master Plan - Draft #3* (Group 70 International 1999).

## PROJECT BACKGROUND

The Mauna Kea Science Reserve comprises the upper slopes and summit region of Mauna Kea. The Science Reserve is an 11,288 acre parcel of land leased by the University of Hawai'i from the State of Hawai'i since 1968 for development and use as a scientific complex devoted to astronomical research. The reserve was established by the Hawai'i State Board of Land and Natural Resources in 1968 when it approved a 65 year lease to the University of Hawai'i. Two summit region parcels excluded from the reserve are components of the Mauna Kea Ice Age Natural Area Reserve. Astronomy facility development has occurred primarily on the summit area above 13,200 feet elevation, while support facilities have developed downslope at Hale Pōhaku (9,800 feet elevation).

In 1983, the University of Hawai'i adopted a complex development plan, the Mauna Kea Science Reserve Complex Development Plan, which projected development to the year 2000 and which has provided guidance for the use and development of the science reserve up to the present. To provide guidance into the next decades, a new master plan is currently being prepared as an update to the Complex Development Plan by the Honolulu firm of Group 70 International for the University of Hawai'i. The Mauna Kea Science Reserve Master Plan (1999) for continued complex development incorporates the major directions and recommendations proposed by the University of Hawai'i's Mauna Kea Advisory Committee and Group 70.

## PROJECT SETTING AND DESCRIPTION

### ***Project Physical Components***

The Complex Development Plan project area consists of four major physical components; the Mauna Kea Science Reserve, the Mid-Elevation Facilities at Hale Pōhaku, the Summit Road which provides access between Hale Pōhaku and the summit region, and the two Natural Area Reserve parcels (*Figure 1*). While the latter are not technically under the management control of the University of Hawai'i, they must be considered as part of the project area because they contain significant archaeological and cultural resources (e.g., the Mauna Kea Adze Quarry Complex and Lake Waiau) which might potentially be effected by development, operational, and recreational activities within the areas under University management control.

The 11,288 acre Science Reserve itself contains the majority of significant archaeological and cultural sites that have been identified to date. Most of the archaeological sites are situated in a band that circles the actual summit area, while the existing astronomy facilities are concentrated in the immediate summit area. This distribution of archaeological sites and astronomy facilities are shown in *Figure 2*, which also shows the location of a recently proposed 525 acre Astronomy Precinct within which all future development atop Mauna Kea would be restricted. The remaining 10,760 acres surrounding the Astronomy Precinct would become the Natural and Cultural Preservation Area.

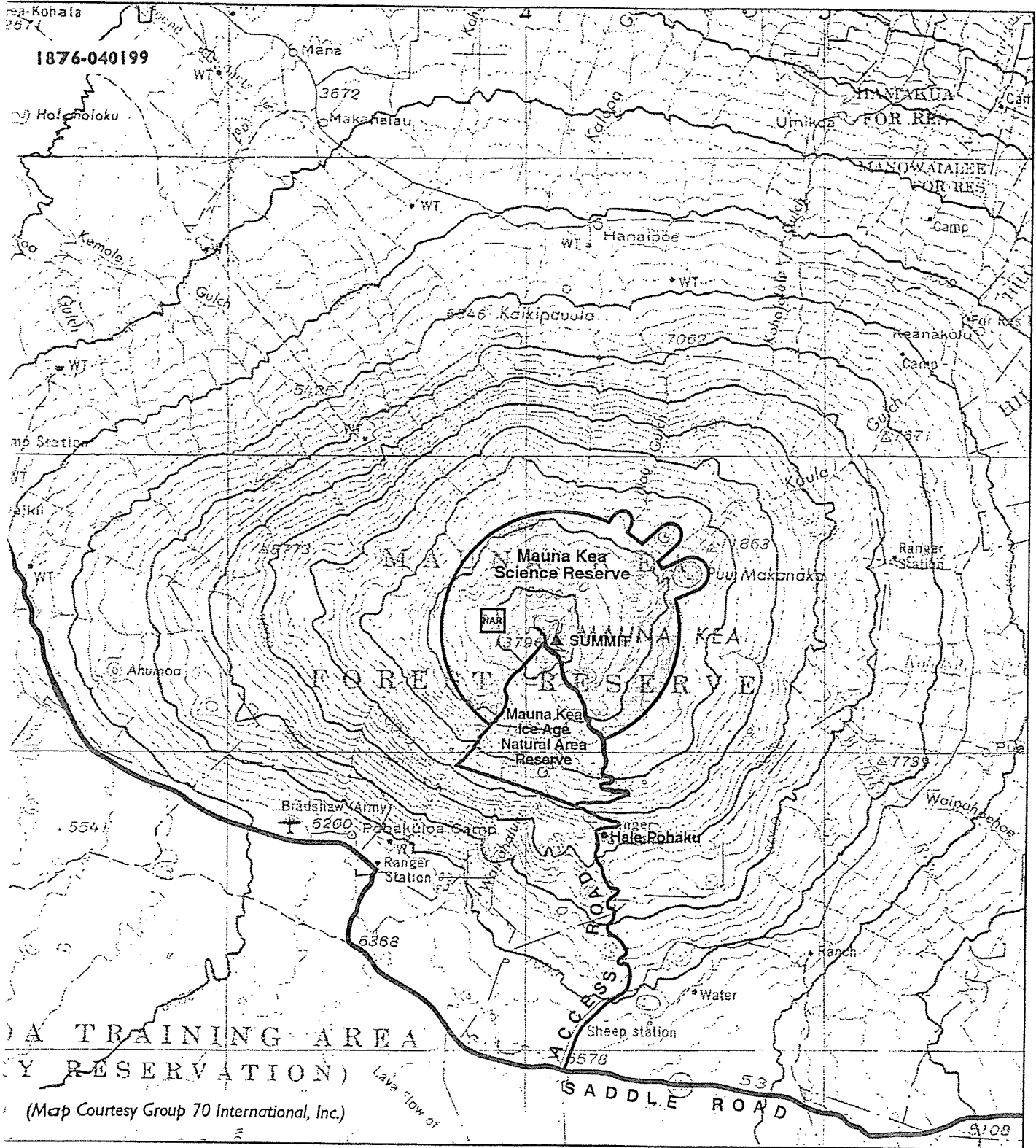
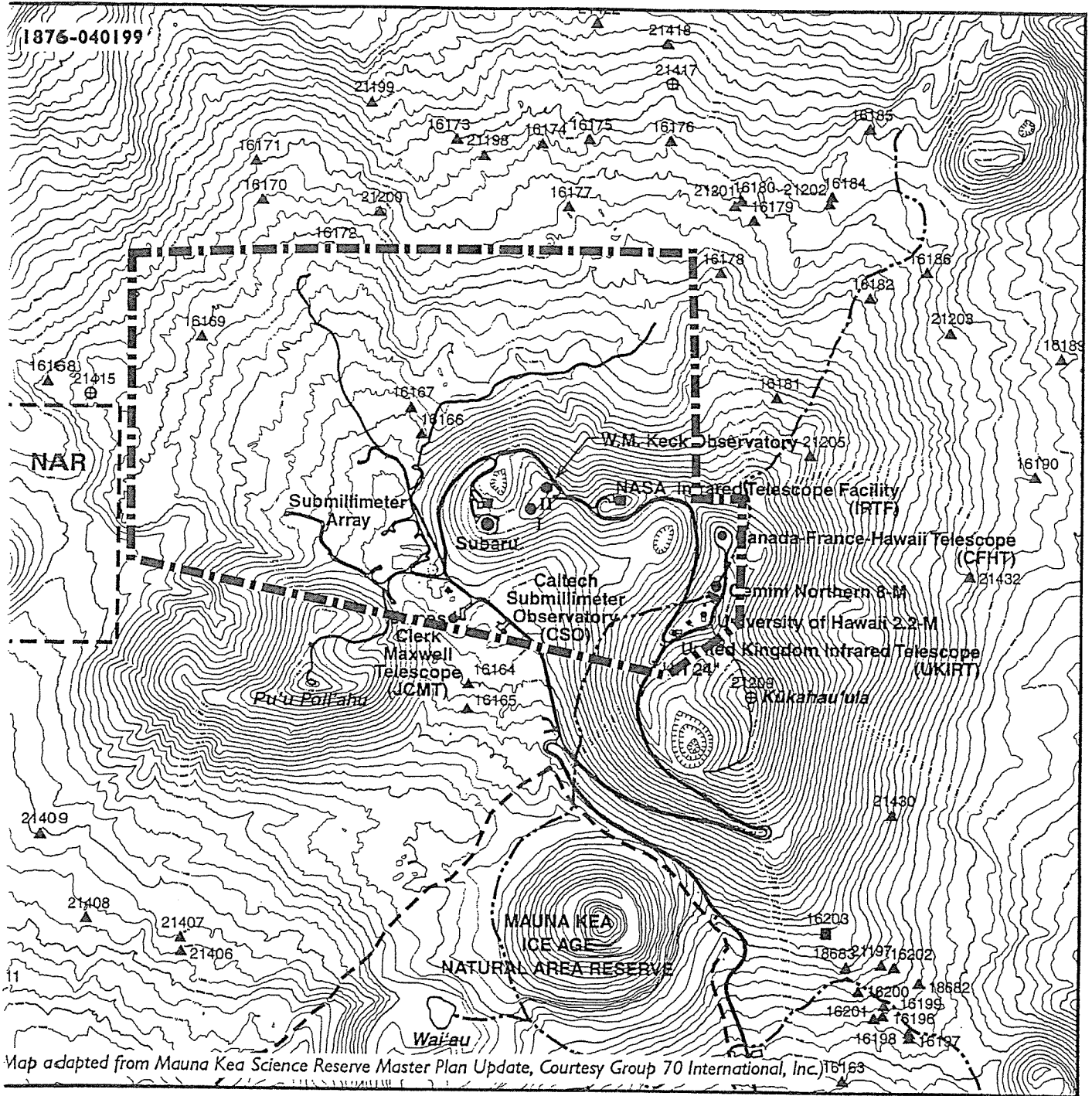


Figure 1. Mauna Kea Science Reserve and Hale Pohaku Project Area



Map adapted from Mauna Kea Science Reserve Master Plan Update, Courtesy Group 70 International, Inc.

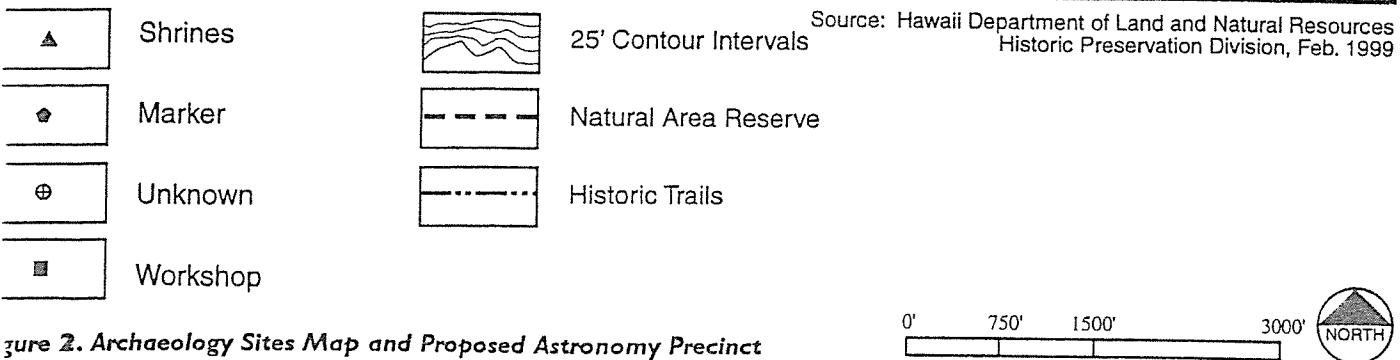


Figure 2. Archaeology Sites Map and Proposed Astronomy Precinct

## ***Project Master Plan***

The Master Plan prepared by Group 70 International (1999) for the update of the Complex Development Plan is structured into three major integral sections. The first section establishes the direction and process for the Master Plan; it provides an introduction to the project, outlines the goals and objectives, and summarizes the methodology used. The second section describes the various components that comprise the existing physical environment and background to the human utilization of Mauna Kea: the natural environment – including geology, flora and fauna, and the historic period destruction of native vegetation; and the cultural setting – including Native Hawaiian cultural concepts, occupation, and resource utilization, and early historic period land use patterns, as known through historical, archaeological, and ethnographic research. The second section also contains a component which discusses the range of management and use issues and opportunities that pertain to Mauna Kea. The third section contains physical and management plans, based on the analysis and integration of all available information relating to future educational, research, cultural, and recreational use of Mauna Kea.

# CULTURAL-HISTORICAL- ARCHAEOLOGICAL OVERVIEW

[Note: this overview section has been taken from, with minor changes, the *Mauna Kea Science Reserve Master Plan - Draft #3* (Group 70 International 1999:V-1 thru 10)]

The ancient saying “*Mauna Kea kuahiwi ku ha’o ika mālie*” (Mauna Kea is the astonishing mountain that stands in the calm) (Pukui 1983: No.2147), expresses the feeling that Hawaiians and non-Hawaiian alike have for this special place. Standing tall over the Island of Hawai‘i, Mauna Kea is home to vast physical, natural, and cultural resources. From early adze makers to modern day astronomers, Mauna Kea has long been a special place for work, worship, and reflection.

## THE FIRST ARRIVALS: NATIVE HAWAIIAN USES

In Hawaiian culture, natural and cultural resources are one and the same. Native traditions describe the formation of the Hawaiian Islands and the presence of life on and around them. All forms of the natural environment, from the skies and mountain peaks, to the valleys and plains, and to the shoreline and ocean depth are the embodiments of Hawaiian gods and deities. One Hawaiian genealogical account records that Wākea (the expanse of the sky) and Papa-hāna-moku (Papa – Earth mother who gave birth to the islands) and various gods and creative forces of nature gave birth to the islands. Hawai‘i, the largest of the islands, was the first-born of these island children. The account continues that the same god-beings were also the parents of the first man (Hāloa), and from this ancestor, all Hawaiian people are descended. In some genealogical chants, Mauna Kea is referred to as “Ka Mauna a Kea” (Wākea’s Mountain), and it is likened to the first-born of the Island of Hawai‘i (Maly 1999).

Cultural attachment is demonstrated in the intimate relationship (developed over generations of experiences) that a people of a particular culture share with their landscape – for example, the geographic features, natural phenomena and resources, and traditional sites, etc., that make up their surroundings. This attachment to environment bears direct relationship to the beliefs, practices, cultural evolution, and identity of a people. In Hawai‘i, Hawai‘i cultural attachment is manifest in the very core of Hawaiian spirituality and attachment to landscape. The creative forces of nature which gave birth to the islands (e.g., Hawai‘i), mountains (e.g. Mauna Kea) and all forms of nature, also gave birth to *nākānaka kānaka nā kānaka* (the people), thus in Hawaiian tradition, island and humankind share the same genealogy” (Maly, 1999, p. 27).

According to Kanahale and Kanahale (n.d.), the first Hawaiians landed on the island’s shores between 25 BCE and 125 CE. Many more Polynesians voyaged to Hawai‘i and settled over the next thousand years. During this settlement period, the early Hawaiians developed stable water and food sources and adapted to their new environment (Kanahale and Kanahale n.d.). Hawaiians first settled near the shore where there was ready access to the ocean’s plentiful resources. The forests provided plants and animals for food, tools, and shelter. Flightless birds, knowing no predators before, became easy prey for Hawaiian hunters. The mountain tops, the highest points of the land, were considered sacred. Mauna Kea is among the most sacred of these high points.

As early as AD 1100, adze makers came in reverence to the Mauna Kea adze quarry, Keanakāko‘i (most of which is located in the Mauna Kea Ice Age Natural Area Reserve), to craft tools from the unique dense basalt found here. As part of the ritual associated with quarrying, craftsman erected shrines to their gods. Adze



makers came to the mountain for short periods of time to work on the basalt that formed from molten lava that erupted under the glacial ice cap. They chipped out chunks of basalt and then worked the stone to form refined tools in shelters and workshops they had built. Different areas were designated for chipping, rough-finishing, and fine-finishing. *Māmane* wood was preferred for adze handles. In addition to the quarrying of adze basalt, craftsmen also collected volcanic glass and dunnite/gabbro for cutting tools and octopus fishing gear sinkers (McCoy, various; and Maly 1999). Further down the mountain, near a spring, the adze makers erected shelters from which they would gather water, wood, and food to sustain them as they worked in the quarry (Langlas et al. 1999). Remnants of shelters, shrines, adze manufacturing, food and offerings remain today to tell of these early craftsmen. The adze makers are thought to have come from neighboring areas and the adzes they crafted were widely used. Keanakāko'i was an active place for hundreds of years, with intensive use after AD 1400 and eventual decline prior to Western contact.

Following the long period of initial settlement, an era of high culture ensued. The Hawaiian society advanced in all areas from the 1200s until the late 1700s. During this time political powers exerted their might and the structure of communities was refined (Kanahele and Kanahele n.d.). In the beginning of the 1600s, during the time of Umi, the Hawaiian Islands were divided into political regions. The larger islands (*mokupuni*) were divided into districts (*moku*). The *moku* were divided into *ahupua'a* and large *ahupua'a* were divided into 'ili. *Ahupua'a* were often entire valleys spanning from the top of the mountain ridge to the ocean. The *konohiki* managed the day-to-day operations of the *ahupua'a* with the aid of *luna* who were experts in various fields such as planting and fishing. Each *ahupua'a* contained nearly all of the resources Hawaiians required for survival from fresh water, plants, and a variety of animals, and was managed so that these resources could be sustained over time.

The *ahupua'a* of Ka'ohe spans the summit of Mauna Kea and includes the Mauna Kea Science Reserve. The lower slopes of Mauna Kea reach into the *ahupua'a* of Humu'ula and Ka'ohe. Hawaiians hunted and gathered in Mauna Kea's *māmane* forests, which were rich with vegetation and native birds including the 'ua'u (dark-rumped petrel), *nēnē*, and *palila*. So prized were the plump young 'ua'u that they could be eaten only by the *ali'i*. Hawaiians came to the *koa* and 'ōhi'a 'ōhi'a forest on the mountain's lower slopes to gather wood for canoe-making and to collect bird feathers. Above the *koa* forests was the open *māmane* forest where they may have hunted 'ua'u and *nēnē*.

All aspects of Hawaiian life were steeped in ritual. For the Hawaiian people, spiritual beliefs, cultural practices and all facets of daily life were intricately bound to the natural landscape of the islands. The lake, Wai'au, was believed to contain pure water associated with the god Kāne and was used in healing and worship practices. Archaeologist Pat McCoy suggests that shrines located at the edge of the summit plateau may mark the transition to a spiritual zone associated with the summit of Mauna Kea (McEldowney and McCoy 1982). The shrines may be associated with the snow line and thus represent shrines to Poli'ahu and/or other deities. Hawaiians also buried the bones of their dead on the slopes of Mauna Kea.

## ARCHAEOLOGY AND ETHNOGRAPHIC RESEARCH

What we know today of Mauna Kea's ancient use and meaning we have learned from the physical clues left behind on the mountain. Ethnographic research explores more recent human activity and the traditions that have been handed down within families over time. For the past two decades archaeologists have conducted extensive field work on the slopes of Mauna Kea, with access made much easier with the construction of a road to summit area. Approximately 3,000 acres, or 27 percent, of the Science Reserve has been surveyed to date (McCoy 1999). Much of this archaeological work has been undertaken by Dr. Patrick McCoy. Currently with the State Historic Preservation Division, McCoy and colleague Dr. Holly McEldowney are in the process of preparing a Historic Preservation Management Plan for Mauna Kea. As part of this plan, McCoy has inventoried and summarized the archaeological sites that provide a wealth of knowledge of past use of the mountain (McCoy 1999).

In addition to the archaeological field work, several individuals have recently conducted ethnographic studies concerning Mauna Kea. Their research is summarized here. Dr. Charles Langlas of the University of Hawai'i-Hilo worked with Paul H. Rosendahl, Ph.D., Inc. to prepare an Archaeological Inventory Survey and Historic and Traditional Cultural Assessment for the Hawai'i Defense Access Road A-AD-6(1) and Saddle Road (SR 200) Project (Langlas et al. 1999; Langlas 1998). Pualani and Edward Kanahale prepared a Social Impact Assessment of Indigenous Hawaiian Cultural Values for this same project (n.d.).

In association with the preparation of this Master Plan, cultural specialist Kepā Maly conducted an oral history interview and archival research effort in the later part of the 1998 to compile the thoughts and memories that those living today have of Mauna Kea (Maly 1999). Maly interviewed 22 individuals and structured his research into broad groupings that are helpful in organizing the often generalized feelings that individuals have toward Mauna Kea.

McCoy summarizes the most recent archaeological work within the Mauna Kea Science Reserve. Based on field work undertaken between 1975 and 1997, a total of 93 archaeological sites have been identified in surveys covering approximately 3,000 acres within the larger Science Reserve, including the immediate summit ridge areas. These sites tell us much about the history of man's association with Mauna Kea. Of the 93 sites, 76 are shrines, four are adze manufacturing workshops, and three are markers. One burial has been positively identified and four other possible burial sites exist. The function of five of the 93 sites is unknown (McCoy 1999).

## **Shrines**

The term "shrine" is used by McCoy to describe all of the religious structures that exist in the summit region of Mauna Kea. The most common of the archaeological features on Mauna Kea, shrines are characterized by the presence of one or more upright stones. The shrines at Mauna Kea range from single uprights to more sophisticated complexes with pavements and prepared courts. The majority of shrines on Mauna Kea are located conspicuously on ridgetops or at breaks in the slope. It is not surprising that shrines were placed in prominent locations with commanding views of the landscape. Shrines have not been found on the tops of cinder cones.

McCoy suggests that each upright on a shrine may have stood for a separate god. The majority of uprights were made of angular slabs found in the glaciated area of Mauna Kea. These select stones were unmodified by their human gatherers and provided a place for the gods to inhabit when they were needed. Based on ethnographic information McCoy suggests that the pointed uprights might represent male gods and the flat-topped uprights, female gods. Stone uprights were typically set in a crack in the bedrock and braced with a few stones. In other shrines, most notably those in the north and east slopes, uprights were set on the top of a boulder. In shrines dispersed throughout the summit area, stone uprights were set into low rubble heaps or piles of stones. In only a few cases, cairns were built to support the stone upright. Platforms were also built to support one or more uprights.

McCoy suggests that the shrines on Mauna Kea were erected for one of two, and possibly more, functions. Though they are not distinguished from each other by physical characteristics, the shrines can be classified as occupational or non-occupational in function. The eight occupational shrines are identified by the remains of specialized workshops and adze manufacturing byproducts. The non-occupational shrines range in complexity from simple features with a small number of uprights to more complex structures with courts and larger numbers of uprights. Most of the shrines found on Mauna Kea have just 1 to 3 uprights, however, some have as many as 24 or 25 stone uprights. McCoy speculates that the simple shrines were built and used by small family groups and the larger, more complex structures were built and maintained by a priesthood. McCoy reasons that the larger number of uprights indicate a larger number of gods that most Hawaiians would

probably not have known. In addition, many of these more complex sites are isolated from the main areas of worship. McCoy has interpreted the shrine complex in the summit region as evidence of an historically undocumented pattern of pilgrimage to worship the snow goddess, Poli'ahu, and other mountain gods and goddesses.

## ***Adze Quarrying and Manufacturing***

The main adze quarry, Keanakāko'i, is located within the Mauna Kea Ice Age Natural Area Reserve. The majority of the workshops and shrines associated with adze manufacturing are located near the main quarry. Four additional adze manufacturing workshops have been found in the Science Reserve across the Summit Access Road from the adze quarry. However, these workshops are of a different kind than those found in the adze quarry. Manufacturing byproducts such as flakes, cores, adze rejects, and hammerstones have been found at these workshops, however, no stone-tool quality raw material is found. Thus it is likely that adzes were flaked elsewhere and transported to these localities at a later stage of the manufacturing process. Each workshop has one or more shrines upon which adze byproducts were offered to the tutelary gods of adze making. McCoy has identified one of these workshops as the location of initiation rites for apprentice adze makers (McCoy 1999).

Several of those interviewed by Maly have heard of or visited the adze quarry areas on Mauna Kea:

I went up once [to Mauna Kea], a long time ago, we went up to Lake Waiau. I remember feeling kind of weak when we got up there, and it was the thin air. I wasn't that old. We went up to Humu'ula and then we took horses. We rode horses up to Wai'au. I was with my father, my mother didn't go. My mother was afraid of horses, she wouldn't go near a horse."... "... we went up and dad showed us this...there were other people with us too, my uncle Allan and his son, and others. He showed us this place where there were 'ōpihi shells all over and it was where daddy said that they used to rough cut the adzes and then bring them down and finish them up, down below..." (Florence La'i-ke-aloha-o- Kamālu "Coco" Vrendenburg-Hind, p. A-118 in Maly 1999).

## ***Trails and Access***

In pre-contact times, it is suspected that travel to Mauna Kea was guided by individual knowledge of the landscape rather than by any distinct trails. It is possible that ridges were followed or that sources of water were known and visited along the way. Individuals going up the mountain likely visited the shrines erected by their family members to their gods. No evidence of pre-contact trails has been documented. (McEldowney 1982)

Maly reports that by the later nineteenth and early twentieth centuries, trails were created and often traveled on horseback. The trails of Mauna Kea linked communities and cultural and natural resources together. To reach the summit, people left the near-shore and plains lands and traveled the mountain slopes to the summit. The trails ascend the slopes of Mauna Kea from nearly all of the major, and many of the smaller *ahupua'a* which lie upon Mauna Kea's slopes. Traditions pertaining to journeys on the mountain trails, and knowledge of Mauna Kea are still retained as important family history today. Mauna Kea's trails, as told of in the oral and written histories, are depicted on the annotated interview map (Maly 1999, Figure 2). Significantly, many of these trails converge at Wai'au, in the Natural Area Reserve.

Interviewees told Maly of their elders travelling to Mauna Kea to worship in the summit region, gather water from Wai'au for healing practices, procure stone for adze making, and take individuals' ash remains to the summit area or to Wai'au for their return to the Earth. Teddy Bell describes one of the mountain trails to Wai'au:

And then we also went from Waiki'i . . . You go so far from Pu'u Lā'au . . . There used to be one pine tree forest. And from that reserve, there's a clump of pine trees. That's where they've got a lot of cones. From that pine trees, you look at Mauna Kea, the two sides, it's almost like a *pali* but wide. And then you right up through that hollow there, and you come up to Lake Waiau. Almost to the end of the *pali* on Mauna Kea (Theodore "Teddy" Bell, Sr., p. A-128 in Maly 1999) (This trail is indicated as K Waiki'i-Waiiau trail).

During the historic period, people have traveled the mountain for Territorial Forestry operations, ranching, hunting, and recreational activities. Lloyd Case describes game trails on the mountain:

You know one of the most amazing things, and I don't know if some of the old timers told you this. But a lot of these Hawaiian trails, a lot of them were used by the sheep, they became game trails after a while. The sheep would use some of these trails. Some of these trails we walked 'em, on the Kemole side, Pu'u Mali side. But a lot of them, they are still there, but you have to have a good trained eye to find 'em" (p. A-348 in Maly 1999).

## **Burials**

As was mentioned earlier, no shrines have been identified on top of cinder cones in the Mauna Kea Science Reserve. McCoy believes that these high and remote places were reserved for burying the dead. Although there are references to human burials on Mauna Kea in oral histories, only one burial site has been positively identified in the mountain summit area. "To date the only positively identified human remains found in the Science Reserve are located at Site 16248 on the summit of Pu'u Makanaka (Fig. 1). Jerome Kilmartin, a surveyor with the United States Geological Survey, noted the presence of human remains on this prominent cinder cone in 1925" (McCoy 1999). Four other sites within the Science Reserve have been identified as possible burials by McCoy:

There are four other sites in the surveyed areas of the Science Reserve that have been identified as possible burials (Sites 16195, 21413, 21414, and 21416). In each case there are compelling reasons to believe that the site is indeed a burial, but because human remains were not seen at the time the site was recorded it has been called a possible burial (McCoy 1999).

Of these four possible burial sites one consists of two adjacent cairns located on the eastern rim of Pu'u Lili'noe. The other three are located on the southern and eastern rim of a large unnamed cinder cone on the northwestern edge of the Science Reserve. (McCoy 1999). McCoy notes that archaeological sites have been found in all areas that have been surveyed to date but the distribution and density of the various types of sites follows certain patterns. The one burial and four possible burials have been found only on the tops of cinder cones and never with shrines.

While none of the individuals interviewed by Maly reported knowing of specific locations of burials in the immediate area of the Mauna Kea summit, many spoke of *ilina* (burial sites) in cinder cones, and other natural features in the region extending from about the 12,000 down to the 7,000 foot elevation. In modern times several family members or close friends of interviewees have had their cremated remains taken to the summit of Mauna Kea for release.

## Summit Area

A significant pattern is the virtual absence of archaeological sites at the very top of the mountain. McCoy states that the "top of the mountain was clearly a sacred precinct that must, moreover, have been under a *kapu* and accessible to only the highest chiefs or priests." Most of the shrines in the Science Reserve are found on the northern and eastern slopes just above and below the 13,000 foot elevation. This pattern suggests that most of those who journeyed to the summit area came from the Hāmākua and Hilo sides of the mountain. Discussing the scarcity of sites on the western and southwestern slopes, McCoy makes the following observations:

While the small number of shrines on this side of the mountain suggest the possibility of people coming from the Kona and South Kohala districts, the number would appear to have never been high. The implications are quite interesting. It suggests that while the mountain may have been viewed from a distance by people from everywhere on the island as a sacred mountain, in practice those who made the journey and worshipped there did not represent an even cross-section of the island populace. The implication is that access to the summit region was under the political control of the east Hawaii chiefdoms, a conclusion that is consistent with all of the other data (McCoy 1999).

All of those interviewed by Maly attributed spirituality and healing qualities to being on Mauna Kea; and several recorded that they still go to Mauna Kea for prayer and restoration. One described Mauna Kea as a sanctuary in ancient times. The area above the forest line was so sacred that once in the upper region, your enemies could not pursue you (Maly 1999).

In addition to the sites identified within the Science Reserve, a wealth of physical evidence can be found in the Mauna Kea Ice Age Natural Area Reserve, outside of the Science Reserve. Within the Natural Area Reserve, the main adze quarry and numerous sites at Wai'au tell of the activity in this geologically and culturally unique area. Many of these sites have been inventoried but have yet to be fully analyzed and related to the other sites found on the mountain.

## Cultural Landscape

The summit of Mauna Kea has been referred to as *wao akua* (region of the gods). The most common understanding of *wao akua* is that it was a remote desolate location where spirits, benevolent or malevolent, lived and people did not live. Usually these places were deep interior regions, inhospitable places such as high mountains, deserts and deep jungles. These areas were not necessarily *kapu* but were places generally avoided out of fear or respect. Different people and family had different protocols when they traveled through these remote regions (George Atta personal communication with Holly McEldowney and Pat McCoy, June 2, 1999):

Perhaps as a result of its prominence, isolation, and extreme environmental conditions, Mauna Kea's place in the culture and history of the Hawaiian people is significant. This 'cultural significance' extends beyond a physical siting, sites or particular features which have been previously identified in archaeological site studies. Mauna Kea is a prominent feature on the cultural landscape of Hawai'i which has been and continues to be, viewed from afar, and to which spiritual and cultural significance is attributed (Maly 1999, p. 3).

The ancient saying "Mauna Kea kuahiwi ku ha'o i ka mālie" (Mauna Kea is the astonishing mountain that stands in the calm) (Pukui 1983: No. 2147), expresses the feeling that Mauna Kea is a source of awe and inspiration for the Hawaiian people. The mountain is a respected elder, a spiritual connection to one's gods.

Thus, the landscape can be interpreted as a significant facet of a Hawaiian's identity. Mauna Kea is the focal point of numerous traditional and historical Hawaiian practices and narratives recorded by both Native Hawaiians and foreign visitors.

A number of place names recorded for this mountain landscape are associated with Hawaiian gods. Other place names are descriptive of natural features and resources, or document events that occurred on the mountain." (Maly 1999) "Native families also retain names such as Maunakea, Poli'ahu, Lilinoe, and Wai'au, which in some cases are directly tied to the mountain landscape" (Maly 1999).

The Kanahelas (n.d.) tell of Mauna Kea as the *piko* or origin point for the island of Hawai'i, and specifically the northern half of the island. Mauna Kea is, therefore, a place of great *mana*. Kanahela has also said that the three *pu'u*, Poli'ahu, Lilinoe, and Wai'au are named for three sister goddesses who are female forms of water. Poli'ahu is embodied in the snow, Lilinoe in mist, and Wai'au in the lake. These *pu'u* are where the goddesses manifest themselves. Of these three landforms two, Poli'ahu and Lilinoe, are located in the Science Reserve. Wai'au is located in the Natural Area Reserve.

Many of those interviewed by Kepā Maly expressed the significance Mauna Kea holds for them as Hawaiians and as individuals. John Spielman and Pualani Kanahela describe Mauna Kea in the context of the entire Island of Hawai'i and in Hawaiian ancestral history:

And I think too, what is important to understand and for people to realize is that it is all connected. Although we are talking about Mauna Kea, Mauna Kea and Paniau are connected. When you go fishing from Paniau, you look up to Mauna Kea and you check out the weather. You look to the mountain and see what the weather patterns are doing. The Kohala mountains. So the fishermen use the mountains as visual aids to help them in their fishing. And perhaps, I don't think as much, but from the mountain side down, but I would imagine that the farmers and the people that lived higher, would look down to the ocean to see if the weather was changing, the cloud patterns on the ocean. It's all connected. It is not separate. But Mauna Kea, I think, is the focal point of this island. It is the *piko*, the breath . . . (John K. Spielman, p. A-282 in Maly 1999).

Mauna Kea was always *kupuna* [an elder, ancestor] to us. Mauna Kea and Mauna Loa, the tips, they were always *kūpuna* [elders, ancestors]. and there was no wanting to go on top. You know, just to know that they were there was just satisfying to us. And so it was kind of a hallowed place that you know is there, and you don't need to go there. You don't need to bother it. But it is there, and it exists. And it was always reassuring because it was the foundation for our island (Pualani Kanaka'ole Kanahela, p. A-366 in Maly 1999).

Alexander Lancaster and Tita Spielman relay the significance of Mauna Kea to each of their families:

Yes, my grandmother Alice. Her Hawaiian name is Kamahalo – she was named after her grandmother, my great, great, great grandmother. She said "When you go up there, you going feel the spirit." And you do feel the spirit (Alexander Kanani'alika Lancaster, p. A-234 in Maly 1999).

Regarding her family's relationship to Mauna Kea, Spielman explains:

Well, it was through my mother, because of course, she grew up in Kohala and spent a lot of time there. And at Pu'u Wa'awa'a and Kiholo, and always loved Mauna Kea. She used to say 'That's my mountain.' And so we got to know it and love it as we do. ("Tita" Elizabeth Kauikeōlani Ruddle-Spielman, p. A-265 in Maly 1999)

Teddy Bell and Lloyd Case relay their own personal feelings about Mauna Kea:

On the slopes of Mauna Kea, there is a ridge there called Pu'u Nānā. Pu'u Nānā, if it's a clear day, you can see all of this Waimea. So that's where I want my ashes to be scattered (Theodore "Teddy" Bell Sr., p. A-139 in Maly 1999).

Because the one thing I loved about it was just going up there and sitting down under the tree and looking out at space. Looking at everything. That is the most rewarding thing that I ever can say happens to me. When I go up there, it just heals me. That is a place for healing. I come back a different person (Lloyd Case, p. A-353 in Maly 1999).

A gentleman interviewed by Langlas was taught by his great-grandparents that there were two sites of ritual importance on Mauna Kea, the summit peak and the lake and surrounding *pu'u* Wai'au. According to this individual, the summit peak was a place to go and pray to the gods for *mana*, to cleanse the person and give him health.

Wai'au is a place of tradition and a source of inspiration. Located outside the Science Reserve in the Natural Area Reserve, Wai'au is a focal point for many visitors to the mountain. Many of the individuals interviewed by Kepā Maly discussed their own visits or visits by family members to Wai'au:

It [Mauna Kea] brings back memories, you know. But way back, people never used to go up there. They never did go to Mauna Kea except on horseback, and that was very few. And right at Lake Waiau, had a bottle there. Whoever went up, would write their name and the date, and put it in the bottle. . . Yeah. So, I don't know what happened to that bottle. My first trip to Mauna Kea was in 1934. And there were a few peoples names in that bottle already. (Theodore "Teddy" Bell Sr., p. A-123 in Maly 1999).

[In response to Kepā Maly's statement that Waiau was a favorite place of her grandfather Eben Low] A very favorite place. Yes, and that's why his plaque was put there. Because that was one of his favorite places. Although, his ashes were scattered at the top, the plaque was put at Waiau" ("Tita" Elizabeth Kauikeōlani Ruddle-Spielman, p. A-270 in Maly 1999).

In addition to feelings of *aloha* expressed for the place, numerous oral traditions of the importance of Wai'au have been handed down through families:

Kepā Maly, "So he [your father] would go *mauka* to Waiau and gather water there?" Anita Landcaster, "And he would bring it, and he had my mom and I drink that water. And if we had it for a week, it never went into the refrigerator, it stayed on the counter, but it was always cold. And that was the sweetest water. It was so pure. I thought nothing of it because I was so young. But as I grew older, I would always remember

it because my dad always had this gallon hanging, you know when he didn't go hunt, the gallon was always hanging in the house. In fact, the last time I saw it was just before he died, and then I don't know what happened to the gallon..." (Anita Leilani (Kamaka'ala) Landcaster, p. 245 in Maly 1999).

"The water they used...the *lā'au lapa'au*, the healers went to this particular place, and another place in the Kohala mountains, there is another spring up there which Papa Auwae uses." . . . "So, I've heard of the old ones getting water from Waiau to use for healing" (Lloyd Case, p. A-353 in Maly 1999).

"And so here, within the Mauna a Wākea, sits this *'apu wai* [water container] which is Waiau. What they are calling Lake Waiau. And as it hasn't had a chance to come down to the rest of us, then it is sacred water, like the water that is in the *piko* of *lau kalo* [taro leaf], and the water that is found in the *'ohe* [bamboo – interpreted as the meaning of the *ahupua'a* name Ka'ohe, within which the summit of Mauna Kea and Waiau are situated]. And the water that is found also in the *niu* [coconut]. So you have all of these different, sacred waters, but to me, that water, Waiau, is the most sacred because it isn't the water that has been spilled, it is still up there in the realm of Wākea." . . . "The most sacred of all the waters." (Pualani Kanaka'ole Kanahele, p. A-368 in Maly 1999).

In ca. 1881, Dowager Queen Emma ascended Mauna Kea on a journey of spiritual and physical well-being. At the time, Queen Emma was in competition with David Kalākaua for the position of ruling chief for the Kingdom of Hawai'i. Each of the two embarked on journeys to prove their connection to the senior line and connect back to a *wahi pana* (a sacred physical place). Emma went to the top of Mauna Kea to bathe in the waters of Wai'au, and cleanse herself in the *piko* of the island (Kanahele and Kanahele 1997).

For some, Wai'au has a special family tie. "...Hawaiian members of the Lindsey family have a tradition of taking the *piko* of their children to Wai'au and the summit of Mauna Kea." "Other interviewees who had not heard of the practice of taking *piko* to Mauna Kea all felt that it was likely to have occurred, and they shared similar stories from their own families of the custom at various localities" (Maly 1999).

Kanahele explains the importance of this tradition of taking the *piko* to a particular place:

I don't personally know any families [who took the *piko* to Waiau]. I know that people took *piko* there, I just don't know who. . . . Well, the *piko* is that part of the child that connected the child back to the past. Connected the child back to the mama. And the mama's *piko* is connected to her mama, and so on. So it takes it back, not only to the *wā kahiko* [ancient times], but all the way to *Kumu Lipo*. . . . So, it's not only the *piko*, but it is the extension of the whole family that is taken and put up in a particular place, that again connects to the whole family line. And it not only gives *mana* or life to the *piko* and that child, but life again to the whole family" (Pualani Kanaka'ole Kanahele, p. A-368, in Maly 1999).

## THE FIRST EUROPEAN CONTACT TO THE ISLANDS

As evidenced by the archaeological evidence and though oral histories, Hawaiian adze-making and worship at Mauna Kea continued through the 1700s. In 1778, the first foreigner arrived in Hawai'i. In the decades that followed, life in Hawai'i changed dramatically with the introduction of new technologies, religion, diseases, animals, and industry. The population of Hawaiians was decimated by the effects of diseases that had



never been seen before in the islands. Port towns such as Kailua, Kealahou and Hilo developed into commercial centers accommodating Western ships. Adze quarrying on Mauna Kea ceased to exist as stone adzes were soon replaced by metal tools after European contact.

In the late 1700s and through the 1800s several Europeans led expeditions to Mauna Kea. The names Goodrich, Baldwin and Alexander are well-known to students of the mountain. Their maps and documents are the earliest written descriptions of Mauna Kea. Early in the 20<sup>th</sup> Century, the Board of Agriculture and Forestry designated the Mauna Kea Forest Reserve.

In 1793 the first cattle were brought to Hawai'i and offered by Captain George Vancouver to King Kamehameha. By the early 1800s more cattle had arrived and escaped to forested areas where, in the absence of natural predators, their populations multiplied (Juvik and Juvik 1984). In addition to wild cattle, sheep and goats thrived on the mountain. In 1809, John Palmer Parker settled in Hawai'i and became friends with King Kamehameha I. The king placed Parker in charge of the wild cattle. With a land grant from King Kamehameha III in 1845, Parker established a ranch, Parker Ranch, which has been in continuous operation until the present. Other ranches also operated in the mid-1800s, however, much of the cattle and sheep continued to run free on the mountain's slopes destroying the native vegetation. By this time, hunting had become a vital lifestyle for many island residents. Hunters continued to pursue the animals for their hides and meat which were consumed locally and bartered for goods from visiting ships.

After the decline in adze making on Mauna Kea, there was limited human activity on the mountain. On the lower portions of the mountain animals grazed and hunters pursued them. On the higher slopes a few Western explorers conducted expeditions up to the summit region. The next major phase of activity began in the early 1960s with the exploration of Mauna Kea as a potential site for astronomy observations.

The travel journals of the first Westerners to explore the mountain's summit region highlight some of the first information on the physical evidence of past activity. McCoy (1999) shares some of these earliest observations. The first documented trip to the summit of Mauna Kea was that of Reverend Joseph Goodrich in 1823. Later writings of this trip record some of the observations and thoughts about the summit region:

Rev. Joseph Goodrich, who, on this occasion, was unfortunately laid up with mountain sickness, had on 26<sup>th</sup> August, 1823, reached the summit of Mauna Kea. This is the first recorded instance of the ascent of this mountain, although Mr. Goodrich mentions that on reaching the top of one of the terminal cones that encircle the main plateau of Mauna Kea, he discovered a heap of stones, probably erected by some former visitor. Who this former visitor was is unknown, but he was probably one of the white men that in the early years of the nineteenth century got a living by shooting wild bullocks that roved on the side of Mauna Kea. It is very unlikely that any native had reached the top to the terminal cones on the summit, owing to being unprovided with warm clothing to resist the great cold and also to the fact that the natives had a superstitious dread of the mountain spirits or gods (Macrae 1922).

An account of Alexander's journey in 1892 mentions the presence of a cairn at the top of a cinder cone:

Messrs. Muir and Alexander ascended the second highest peak on the northwest, overlooking Waimea, 13,645 height to continue their survey. In the cairn on the summit a tin can was found, which contains brief records of the visits of five different parties from 1870 to the present time, to which we added our own (Alexander 1892).

Reflecting this notion, Ellis (1979) looked back to the travels of Goodrich and Blatchely, who ascended the peak about six months after Goodrich, and provided this description of Hawaiians' view of Mauna Kea:

The snow on the summit of the mountain, in all probability, induced the natives to call it Mouna-Kea (mountain white), or, as we should say, white mountain. They have numerous fabulous tales relative to its being the abode of the gods, and none ever approach the summit – as, they say, some who have gone there have been turned to stone. We do not know that any have been frozen to death; but neither Mr. Goodrich, nor Dr. Blatchely and his companion, could persuade the natives, whom they engaged as guides up the side of the mountain, to go near its summit (Ellis 1979).

### CULTURAL PRACTICE TODAY

In their ethnographic work Maly, Langlas, and Kanahele and Kanahele describe some of the practices that individuals and families conduct on Mauna Kea today. Several of the individuals interviewed by Maly stated that “they still go to Mauna Kea for prayer and restoration”. All interviewees attributed spirituality and healing qualities to being on Mauna Kea (Maly 1999).

Dr. Langlas interviewed a woman of the Poli'ahu line, meaning that Poli'ahu is one of her family's 'aumakua. This family has designated an individual as their *kahu* for worship of Poli'ahu. This individual has constructed a shrine on Mauna Kea to worship Poli'ahu and has incorporated a stone given to her by the family. She considers the whole mountain to be sacred and feels that it is appropriate to worship anyplace on the mountain if one is spiritually guided there. Thus, worship should not be limited to traditional sites. The shrine placed by this *kahu* is not located in a traditional site but rather in a place that she was guided to.

Maly's interviewees also report of the practice of taking ash remains to the summit of Mauna Kea for release. Two of the individuals interviewed by Maly have instructed that upon their deaths, their ashes are to be taken to specific places on the slopes of Mauna Kea.

While the ethnographic research provides few accounts of actual cultural practices on the mountain, other individuals and groups may visit the mountain for worship on special occasions or on a regular basis. Many more carry with them an esteem and respect for Mauna Kea:

In both its genealogical associations and its physical presence on the island landscape, Mauna Kea is a source of awe and inspiration for the Hawaiian people. In Hawaiian practice elders are revered – they are the connection to one's past – and they are looked to for spiritual guidance. Because of its place in the Hawaiian genealogies, Mauna Kea, the landscape itself is a sacred ancestor (Maly 1999, p. D-25).

This is the spirit with which many view the mountain today.

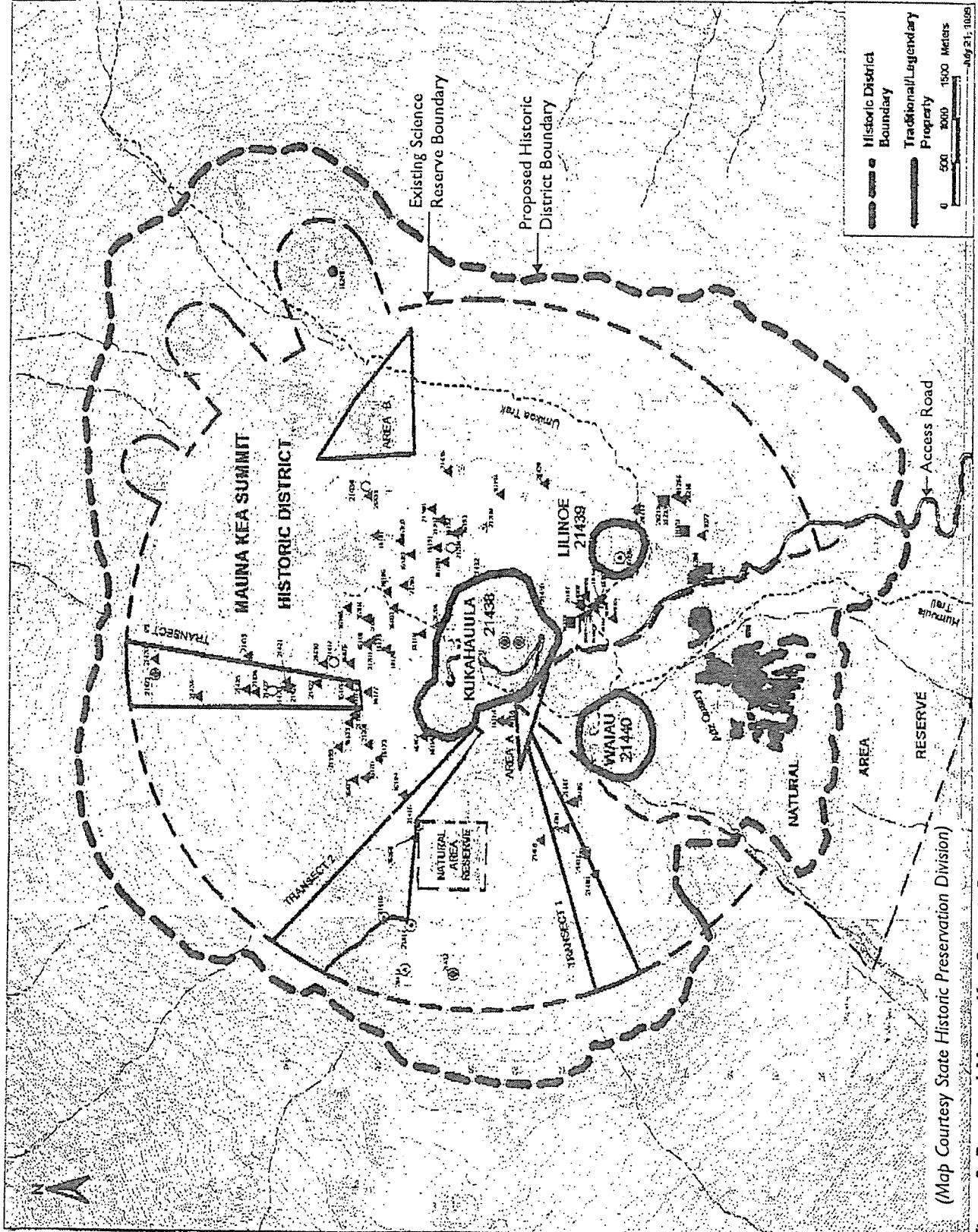
# PROPOSED MAUNA KEA SUMMIT REGION HISTORIC DISTRICT NATIONAL REGISTER NOMINATION

SHPD staff have recently indicated that they will be proposing a historic district designation for the summit region of Mauna Kea which they believe will meet the eligibility criteria for inclusion in both the Hawai'i State and the National Register of Historic Places. This historic district proposal has evolved in the course of reviewing historical, ethnographic, and archaeological information for the preparation of a historic preservation plan for the protection and management of historic properties and cultural resources on Mauna Kea. Within the historic preservation domain, a historic district is defined as a historic property that "...possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS 1990:5).

*Figure 3* indicates the approximate boundary of the proposed district. Provisionally referred to as the "Mauna Kea Summit Region," the proposed historic district incorporates the virtually the entire Science Research summit area, extending beyond limits of the reserve, and also portions of the Natural Area Reserve. The district boundary has been tentatively set to correspond with the moraine fields and the incidence of topographic change which provides the general appearance of a summit plateau. The proposed district includes the total of 93 archaeological sites identified within the Science Reserve, three landscape features within the reserve believed to qualify as traditional cultural properties, and the Mauna Kea Adze Quarry Complex situated within the Natural Area Reserve. Of the 93 archaeological sites identified to date, 76 are shrines of varying complexity, four are adze manufacturing workshops, one is a confirmed burial, four are possible burials, three are marker cairns, and five are of undetermined function.

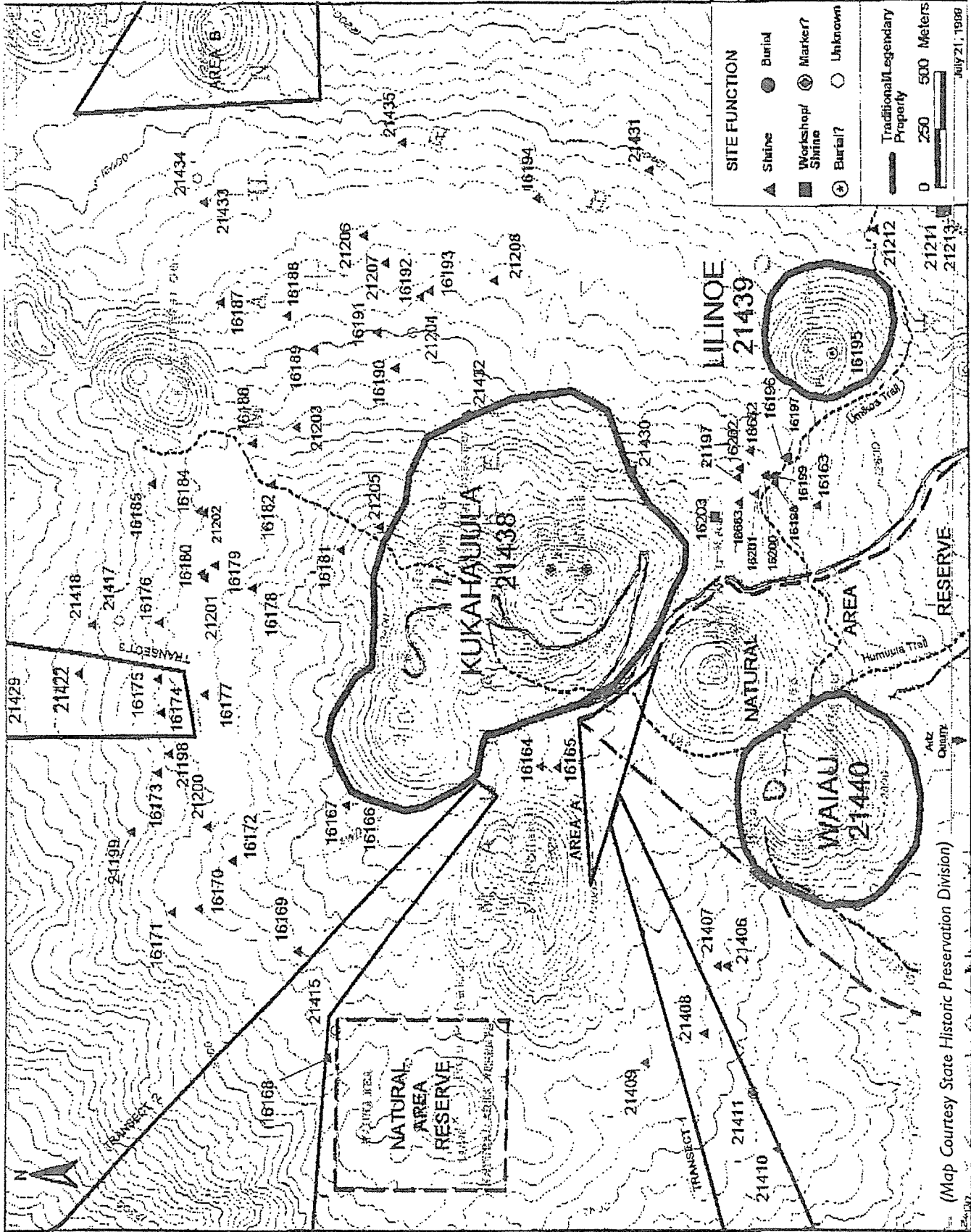
*Figure 4* indicates the location and approximate boundaries of the three landscape features believed to qualify as traditional cultural properties on the basis of traditional Native Hawaiian cultural practices and beliefs associated with them. The boundaries of the properties have been set to coincide with the base of the component *pu'u*, or cinder cones. The largest of the three properties, "Kukahau'ula," refers to the cluster of three *pu'u* that merge and collectively make up the summit of Mauna Kea. The second property, "Waiau," refers to the small lake and adjacent *pu'u* situated southwest of the summit and within the Natural Area Reserve. The third property, "Lilinoe," refers to a *pu'u* situated southeast of the summit and within the Science Reserve.

To be considered eligible for inclusion in the National Register of Historic Places, a potential property, such as the proposed Mauna Kea Summit Region Historic District, must demonstrate its historical significance by meeting the "National Register Criteria for Evaluation" contained within the Code of Federal Regulations, Title 36, Part 60 (CFR 1981). Generally speaking, this is accomplished through (a) association with an important historic context, and (b) retaining historic integrity of those aspects or elements needed to communicate significance. More specifically, to be found eligible for inclusion in the National Register of Historic Places, an entity of purported historical significance must satisfy a five-fold sequential test of (a) being one of a recognized category of tangible physical property, (b) being associated with an important historic context, (c) meeting one or more of the four basic National Register Criteria, (d) determining whether an otherwise ineligible property meets any of seven National Register Criteria Considerations which would make the property eligible, and (e) having integrity – the ability to convey significance. It is assumed that SHPD staff, in preparing the National Register nomination for the Mauna Kea Summit Region Historic District that is intended to be included in their Historic Preservation Plan for the Mauna Kea Science Reserve (DLNR In prep.) will adequately address all of these areas in making their argument for National Register eligibility.



(Map Courtesy State Historic Preservation Division)

Figure 3. Proposed Mauna Kea Summit Region Historic District (SHPD)



(Map Courtesy State Historic Preservation Division)

Figure 4. Three Potential Traditional Cultural Properties Identified within the Proposed Mauna Kea Summit Region Historic District (SHPD)

# NATIVE HAWAIIAN CULTURAL PRACTICES, FEATURES, AND BELIEFS ASSOCIATED WITH THE UNIVERSITY OF HAWAII MAUNA KEA SCIENCE RESERVE MASTER PLAN PROJECT AREA

The principal source of information utilized by the present study for the identification of Native Hawaiian cultural practices, features, and beliefs associated with the Science Reserve Master Plan project area on Mauna Kea was the oral history and consultation study carried out by Kepā Maly (1999). Maly made extensive efforts to identify and contact individuals potentially knowledgeable of Mauna Kea with regard to traditional and customary cultural practices, traditional cultural properties, and contemporary cultural practices. He conducted a total of fifteen recorded interviews with twenty-two different informants, and in the process of carrying out his study consulted with more than 100 individuals, a great number of whom had knowledge about Mauna Kea and were able to provide information which supplemented that obtained during the recorded informant interviews.

In the course of his study, Maly documented on the basis of his recorded informant interviews and informal consultations a wide range of traditional and contemporary cultural practices, features, and beliefs associated with Mauna Kea. Taken together, these manifest a quality which Maly has referred to as the “cultural attachment” between Native Hawaiians and Mauna Kea:

“Cultural Attachment” embodies the tangible and intangible values of a culture. It is how a people identify with and personify the environment (both natural and manmade) around them. Cultural attachment is demonstrated in the intimate relationship (developed over generations of experiences) that people of a particular cultural share with their landscape – for example, the geographic features, natural phenomena and resources, and traditional sites etc., that make up their surroundings. This attachment to environment bears direct relationship to beliefs, practices, cultural evolution, and identity of a people. In Hawai‘i, cultural attachment is manifest in the very core of Hawaiian spirituality and attachment to landscape. The creative forces of nature which gave birth to the islands (e.g., Hawai‘i), mountains (e.g., Mauna Kea) and all forms of nature, also gave birth to *na kanaka* (the people), thus in Hawaiian tradition, island and mankind share the same genealogy (Maly 1999:27).

In his study report, Maly summarized the traditional and contemporary cultural practices, features, and beliefs in terms of three different categories: traditional and customary cultural practice claims, traditional cultural property claims, and contemporary cultural practice claims (Maly 1999:27-33). Maly’s summary is presented in *Table 2*, which includes the name or designation of practice or property, the sources of information relating to the practice or property, and general comments about the practice or property.

## **TRADITIONAL AND CUSTOMARY CULTURAL PRACTICES AND BELIEFS**

A number of practices and beliefs were identified by Maly in the course of his study as being traditional and customary practices and beliefs associated with the Mauna Kea Science Reserve Master Plan project area (*see Table 2a*). These include both those generally associated with the overall summit region of Mauna Kea, as well as those more directly associated with specific geographical locations within the Science Reserve project area (*see Table 2b*). Identified practices and beliefs included the following:

**Table 2. Summary of Identified Native Hawaiian Cultural Practices, Features, and Beliefs Associated with the Mauna Kea Science Reserve Master Plan Project Area \***

**a. Traditional and Customary Practices**

Practice	Source of Identification	Comments
Prayer and ritual observances	Historical literature.  Oral history interviews with – A. & A. Lancaster, A.K. Haa Sr. (& Jr.), H.K. Springer, P. Kanahale, I. Lindsey-Fergerstrom et al.  Consultation records of: Ed Stevens, Iopa Mauna-kea, L. McCord, K. Pisciotta, L.K. Kimura, E. Kauhi, and AHCC.	See Appendix D.  Several interviewees discuss past practices as learned from their elders, and others document that such observances remain important to their Hawaiian spirituality.
Collection of water from Waiau for ritual purposes	Historical literature.  Oral history interviews with A & A Lancaster, A.K. Haa Sr. (& Jr.), L. Case, and P. Kanahale.	See Appendix D.  Described as the most sacred of Kāne's waters in all the Hawaiian Islands.
Depositing of <i>piko</i> (umbilical cords) at Waiau and the summit peaks of Mauna Kea.	Oral history interviews with – K. Kalili, I. Lindsey-Fergerstrom et al., and P. Kanahale.  Consultation records of – L.K. Kimura, and B. Robertson.	Members of the Lindsey-Fergerstrom family describe the practice as on-going. Barbara (Ka'apuni) Robertson, was told by her elders that it was a custom that was unique to people of the Waimea region, who shared a particularly close affinity with Mauna Kea.
Burial Practices:  • Interment of remains –	Historical literature.  Oral history interviews with – J. Ah San, T. Imoto, S. & D. Kaniho, A. Lancaster, A.K. Haa Sr. (& Jr.), L. Case, I. Lindsey-Fergerstrom et al.  Consultation records of: Ed Stevens, Iopa Mauna-kea, L. McCord, K. Pisciotta, and AHCC.	(see Appendix D)  Describing specific knowledge of ancient burial sites, and belief that burials occurring in the upper elevations are those of <i>ali'i</i> and other sacred personages – the ancestors of some interviewees.
• Releasing of ashes at the summit and other locations on Mauna Kea.	Oral history interviews with – T. Imoto, J. Ah San, T. Bell Sr., S. & D. Kaniho, Tita & JK Spielman, and P. Kanahale.	Described as a continuation of the traditional practice of taking loved ones remains to Mauna Kea.

\*from Maly (1999)

**Table 2 b. Traditional Cultural Properties**

Property	Source of Identification	Comments
<p>Ka Mauna a Wākea or Mauna Kea, also referred to as “Ka piko kaulana o ka ‘āina” (The famous summit or center of the land).</p>	<p>Historical literature.</p> <p>Oral history interviews with all Hawaiian interviewees (particularly – J.K. Lindsey, K.K. Phillips, A. &amp; A. Lancaster, A.K. Haa Sr. &amp; Jr., L. Case, and P. Kanahele).</p> <p>Consultation records of: Association of Hawaiian Civic Clubs (AHCC), Ed Stevens, Iopa Maunakea, L. McCord, K. Pisciotta, L.K. Kimura, E. Kauhi, L. Teves, and B. Robertson.</p> <p>Interviews with Tita &amp; JK Spielman, H.K. Springer, A.K. Haa Sr. (&amp; Jr.), C. Hind, L. Case, and P. Kanahele; and consultation Appendices B &amp; C.</p> <p>Oral history interview with Lloyd Case.</p> <p>Consultation records of K. Pisciotta and L. McCord.</p>	<p>See Appendix D.</p> <p>Generally described as the mountain region from approximately the 6,000 foot elevation to summit. Described as a sacred landscape that is a physical and spiritual connection between one's ancestors, history, and the heavens.</p> <p>Many of the <i>pu'u</i> (hills) and other topographic features on Mauna Kea are named for Hawaiian gods and deities. Also, many of the <i>pu'u</i>, particularly those of the upper region, are believed to be burial sites of <i>ali'i</i> and other important ancestors.</p> <p><u>Viewplain:</u> The upper mountain region is described as a sacred landscape; for some interviewees ascending the mountain and viewing its features is important, for other families, the mountain is so scared that there is no desire to ascend it, but seeing it from afar—feeling its presence—is sufficient.</p> <p>Mountain landscape in <u>navigational traditions:</u> Hawaiian Navigational It is noted that while none of the archival-historical literature cited has made specific references to sites or features on Mauna Kea that were recorded as being associated with navigational practices and customs, the gods and deities associated with Mauna Kea have celestial body forms and some were evoked for navigational practices.</p> <p>Ms. Pisciotta was invited to provide the interviewer with a report she has prepared on the navigational-practices—to be included as an appendix under her name with the present study—but at the time of this writing, the report has not been received.</p> <p>(It is likely that Rubellite Kawena Johnson, Clay Bertlemann and Nainoa Thompson could provide the University with additional documentation on native practices and lore of Hawaiian navigation.)</p>



**Table 2 b. Traditional Cultural Properties (Continued)**

Property	Source of Identification	Comments
<p>Pu'u Kūkahau'ula – the summit peak of Mauna Kea.</p>	<p>Historical literature.</p> <p>Oral history interviews with all interviewees (particularly–I. Lindsey-Fergerstrom et al., A.K. Haa Sr., A. &amp; A. Lancaster, L. Case, Tita Spielman et al., and P. Kanahele).</p> <p>Consultation records of: Ed Stevens, Iopa Mauna-kea, L. McCord, and K. Pisciotta.</p>	<p>See Appendix D.</p> <p>Generational repository of: <i>piko</i> (umbilical cords of children); ashes of individuals with strong attachment to Mauna Kea; and locations of an <i>ahu</i> (possibly more than one over time) associated with navigational practices and historic surveys.</p>
<p>Pu'u Poli'ahu</p>	<p>Historical literature.</p> <p>Oral history interviews with all Hawaiian interviewees (particularly – A. &amp; A. Lancaster, L. Case, and P. Kanahele).</p> <p>Consultation records of: Ed Stevens, L. McCord, K. Pisciotta, and AHCC.</p>	<p>See Appendix D.</p> <p>As an important cultural-geographic feature, and for its association with the Hawaiian goddess and ancestress of some interviewees.</p>
<p>Pu'u Lilinoe</p>	<p>Historical literature and oral history interviews with all Hawaiian interviewees (particularly – A. &amp; A. Lancaster, A.K. Haa Sr., and P. Kanahele).</p> <p>Consultation records of: Ed Stevens, L. McCord, K. Pisciotta, and AHCC.</p>	<p>See Appendix D.</p> <p>As an important cultural-geographic feature, and for its association with the Hawaiian goddess and ancestress of some interviewees.</p>
<p>Waiiau</p>	<p>Historical literature.</p> <p>Oral history interviews with all Hawaiian interviewees (particularly – K. Kalili, J.K. Lindsey, K.K. Phillips, A. &amp; A. Lancaster, A.K. Haa Sr., L. Case, P. Kanahele, and I. Lindsey Fergerstrom et al.).</p> <p>Consultation records of: Ed Stevens, L. McCord, K. Pisciotta, L.K. Kimura, B. Robertson, and AHCC.</p>	<p>See Appendix D.</p> <p>As an important cultural-geographic feature – a repository of <i>piko</i> of children; and a source of sacred water used for ceremonial and healing practices.</p>

**Table 2b. Traditional Cultural Properties (Continued)**

Property	Source of Identification	Comments
Pu'u Mākanaka and Kaupō vicinity.	Historical literature.  Oral history interviews – particularly J. Ah San, S. & D. Kaniho, and P. L'Orange.	See Appendix D.  Particularly noted as burial sites.
<p>Trails —</p> <ul style="list-style-type: none"> <li>• Kūka'iau-'Umikoa to Mauna Kea Trail.</li> </ul> <p>There are also other trails which are potential Traditional Cultural Properties; documentation was recorded for the following trails:</p> <ul style="list-style-type: none"> <li>• Humu'ula to Mauna Kea Trail.</li> <li>• Laupāhoehoe-Waipunalei-Kanakaleonui to Mauna Kea Trail.</li> <li>• Makahālau-Kemole to Waiau Trail. &amp;</li> <li>• Waiki'i-Pu'u Lā'au to Waiau Trail.</li> </ul> <hr style="width: 10%; margin: 10px auto;"/> <ul style="list-style-type: none"> <li>• 10,000 ft. elevation trail/road around Mauna Kea.</li> </ul>	<p>Historical literature.</p> <p>Oral history interviews: particularly – J. Ah San, T. Imoto, S. &amp; D. Kaniho, T. Bell Sr., A. Lancaster, A.K. Haa Sr. (&amp; Jr.), M. Pence, L. Case, I. Lindsey Fergerstrom et al., and A.K. Haa Sr. (&amp; Jr.).</p> <p>Oral history interviews: particularly – J. Ah San, T. Imoto, S. &amp; D. Kaniho, T. Bell Sr., A. Lancaster, M. Pence, and P. L'Orange.</p> <p>Oral history interviews: particularly – J. Ah San, &amp; L. Case.</p> <p>Oral history interviews with: J.K. Lindsey, T. Bell Sr, and L. Case.</p> <p>Oral history interviews with: J.K. Lindsey, and Teddy Bell Sr.</p> <p>Oral history interviews with: I. Lindsey Fergerstrom et al., and L. Case</p>	<p>See Appendix D.</p> <p>Trail generally known to all interviewees, and remains in use by some who travel to Mauna Kea in present times.</p> <p>A portion of the trail which connects with the lower Mānā-Laumai'a Trail (around the base of Mauna Kea) was also known as "loane's Trail" (loane was the great grandfather of A.K. Haa Sr.)</p> <p>Trail generally known and traveled on by all individuals who went to Mauna Kea prior to opening of the summit road alignment in the 1960s.</p> <p>Trail generally known to individuals who traveled to Mauna Kea up to ca. 1930.</p> <p>These two trails are not generally known to most people who have traveled to the summit region of Mauna Kea. The two elder interviewees last traveled on them in the 1930s, Lloyd Case still travels the trails.</p> <p>In the interviews, it was also noted that most of the trails rising to the summit of Mauna Kea converge in the vicinity of Waiau, with a trail then rising to the summit peak.</p> <p>Of particular interest to this trail/road feature at approximately the 10,000 ft. elevation are references to: (1) stone platforms and up-rights that mark the contour of the trail (Mrs. Fergerstrom et al., associate them with the work on the alignment—there are burials and other features near by which they have personally seen); and (2) the walled enclosures in the region above Pu'u Lā'au.</p>

**Table 2c. Contemporary Cultural Practices**

Practice	Source of Identification	Comments
Prayer and ritual observances – including construction of new <i>kūahu</i> (altars) as a part of ceremonial observances.	Consultation records of: K. Pisciotta and L. McCord.	See Appendix C.
Keanakāko'i – This complex of adze quarries, shrines and numerous associated features is already a property listed on the National Register of Historic Places.	<p>Historical literature.</p> <p>Oral history interviews with all interviewees (particularly – J. Ah San, A. Lancaster, A.K. Haa Sr., H.K. Springer, P. Kanahele and I. Lindsey-Fergerstrom et al.).</p> <p>Consultation records of Wm. Akau.</p>	<p>See Appendix D.</p> <p>All interviewees had knowledge of the adze quarries and various caves associated with the practice of collection of stones for adzes, (only I. Fergerstrom et al.,—the result of years of traveling on Mauna Kea with Harry Fergerstrom who worked for the Territorial/State Forestry Div.) had knowledge of the platforms and uprights. None of the other interviewees could recall hearing of, or seeing the shrines in the vicinity of the quarry sites.</p> <p>There is also on-going contemporary practice of collection of stone from adze quarry sites for various purposes. While present-day collection of stone from traditional quarry sites compromises the integrity of the cultural resources, the practice is claimed as a traditional right. This is one of the important management issues which cultural practitioners, the Department of Land and Natural Resources, and the University will need to address.</p> <p>The interviews with J. Ah San, L. Case, H.K. Springer, and P. Kanahele include introductory discussions on protocols for collection of adze stones.</p>
Subsistence and recreational hunting.	Oral history interviews with J. Ah San, and T. Imoto, M. Pence, S. & K. Kaniho, T. Bell Sr., I. Lindsey-Fergerstrom et al., and L. Case.	Described as important to the well-being of practitioner families, and important in maintaining a balance in an already disturbed environment on Mauna Kea.

1. Performance of prayer and ritual observances important for the reinforcement of an individual's Hawaiian spirituality;
2. Collection of water from Waiau for a variety of healing and other ritual uses;
3. Deposition of *piko* (umbilical cords) at Waiau and the summit peaks of Mauna Kea;
4. Use of the summit region as a repository for human burial remains, by means of interment, particularly on various *pu'u*, during earlier times, and more recently by means of releasing ashes from cremations;
5. Belief in the upper mountain region of Mauna Kea, from the Saddle area up to the summit, as a sacred landscape – as the personification of the spiritual and physical connection between one's ancestors, history, and the heavens; and
6. Association of unspecified traditional navigation practices and customs with the summit area.

### **TRADITIONAL CULTURAL PROPERTIES**

In the course of his study, Maly identified a number of potential traditional cultural properties within the Mauna Kea Science Reserve Master Plan project area. These are historic properties that are of importance to Native Hawaiians because they possess traditional cultural significance derived from associated cultural practices and beliefs (*see Table 2b*). (See also Figure 2 in Maly 1999 for a map indicating the locations of identified properties.) Potential traditional cultural properties identified to Maly by knowledgeable informants and cultural practitioners as being present within the Science Reserve Master Plan project area included the following:

1. The entire mountain region of Mauna Kea, from approximately the 6,000 foot elevation (the Saddle area) to the summit;
2. Pu'u Kukahau'ula – a cinder cone that is the summit peak of Mauna Kea (sometimes also referred to by the modern name of Pu'u Wekiu);
3. Pu'u Poli'ahu – a prominent summit region cinder cone situated to the west of Pu'u Kukahau'ula;
4. Pu'u Lilinoe – a prominent summit region cinder cone situated to the southeast of Pu'u Kukahau'ula;
5. Waiau – a shallow lake and its adjacent cinder cone situated in the summit region to the southwest of Pu'u Kukahau'ula;
6. Pu'u Makanaka and Kaupo vicinity – a cluster of two prominent cinder cones situated near the edge of the summit region to the northeast of Pu'u Kukahau'ula;
7. Mauna Kea-'Umikoa Trail – a foot and horse trail extending between Kuka'iau in Hāmākua to immediately south of the summit area;

8. Mauna Kea-Humu'ula Trail – a foot and horse trail extending from the Humu'ula Sheep Station up to the summit area; and
9. A number of lesser foot and horse trails – including the Mauna Kea-Laupahoehoe-Waipunalei-Kanakaleonui Trail, the Mauna Kea-Makahalau-Kemole Trail, and the Waiiau-Waiki'i-Pu'u La'au Trail.

## **CONTEMPORARY CULTURAL PRACTICES**

Contemporary cultural practices and beliefs would be those of cultural practitioners for which no clear specific basis in traditional culture can be clearly established or demonstrated for example, the conducting of ritual ceremonies at sites or features for which no such prior traditional use and associated beliefs can be demonstrated. In some cases, however, it may be possible to demonstrate the reasonable evolutionary development of a contemporary practice from an earlier traditional practice.

In the course of his study, Maly identified several contemporary cultural practices and beliefs associated with the Mauna Kea Science Reserve Master Plan project area (*see Table 2c*). The following were related to Maly by knowledgeable informants and cultural practitioners:

1. Prayer and ritual observances – including construction of new *kuahu* (altars) in connection with ceremonial activities;
2. Collection of raw material stone from quarry sites within the Mauna Kea Adze Quarry Complex; and
3. Subsistence and recreation hunting.

# CURRENT NATIVE HAWAIIAN PERSPECTIVES ON MASTER PLAN PROJECT

As a consequence of conducting his recorded interviews and informal consultations with knowledgeable informants and cultural practitioners, Maly was able to formulate a series of general recommendations and comments that reflected current Native Hawaiian perspectives on the Science Reserve Master Plan project (Maly 1999:34-5). The most substantial of these may be summarized as follows:

1. The great majority of individuals expressed the desire that no further development of astronomy facilities on Mauna Kea. Visual impacts and physical impacts upon the *pu'u* were often mentioned as important concerns;
2. Protection of the general landscape and view planes, especially among the *pu'u* and other cultural resources, was regarded as very important;
3. The present lessee should appreciate the past opportunity for the use of Mauna Kea, honor prior commitments, complete studies and work that were called for by the original complex development plan, and establish and comply with its own guidelines and requirements for the use of Mauna Kea;
4. In terms of management planning, the Native Hawaiian model of *ahupua'a* management, which incorporates and integrates all aspects of the physical, cultural, and spiritual environments, should be utilized;
5. All users of Mauna Kea should enter into a sustainable partnership, with the Native Hawaiian and other components of the local community, that would provide for the future stewardship of Mauna Kea; and
6. Plans need to be formulated, in consultation with cultural practitioners and families having genealogical ties to Mauna Kea, for access to and use of traditional sites and resources.

# CONCLUSION

The basic purpose of this concluding section is to assess the findings of the present cultural impact assessment study to determine if any of the Native Hawaiian cultural practices, beliefs, or features identified as being associated with the University of Hawai'i Science Reserve Master Plan project area represent traditional and customary practices or places which might potentially be affected by future development of any astronomy facilities or related uses. The specific objectives of this conclusion include the following:

1. Summarize the nature and variety of identified Native Hawaiian cultural practices, beliefs, and features;
2. Evaluate the significance of identified Native Hawaiian cultural practices, beliefs, and features;
3. Assess the potential effects that any further development or use of the Science Reserve might have upon identified Native Hawaiian cultural practices, beliefs, and features; and
4. Make recommendations for measures that might (a) mitigate any potentially adverse effects of future development or use upon identified Native Hawaiian cultural practices, beliefs, and features, or (b) be otherwise appropriate.

## **NATIVE HAWAIIAN CULTURAL PRACTICES AND PROPERTIES ASSOCIATED WITH THE UNIVERSITY OF HAWAI'I MAUNA KEA SCIENCE RESERVE MASTER PLAN PROJECT AREA**

The number and variety of individuals and groups contacted and consulted by Maly during the present study, as evidenced by the twenty-two knowledgeable informants and cultural practitioners (*see Table 1*) who provided information in the form of fifteen tape recorded and transcribed interviews, and the more than 100 individuals and groups that provided additional information through more informal consultations (Maly 1999:Appendix B), demonstrates an adequate, appropriate, and reasonable good-faith effort to identify the full range of Native Hawaiian cultural practices, features, and beliefs currently associated with the Science Reserve Master Plan project area on Mauna Kea. This documented effort indicates it likely that the full range of current cultural practices, features, and beliefs associated with the Science Reserve Master Plan project area has been identified, even though in many instances only the general nature of these practices, features, and beliefs has been determined but not documented in any great detail.

An overview of the cultural practices – including the component behaviors, features, beliefs, and values – summarized in the preceding section of the present report, and presented more fully and in richer detail in Maly's oral history and consultation study (1999) illustrates a pervasive general theme which flows throughout native Hawaiian culture and binds it together. To Native Hawaiians, the natural elements of the physical environment – the land, sea, water, winds, rains, plants, and animals, and their various embodied spiritual aspects – comprise the very foundation of all cultural life and activity – subsistence, social, and ceremonial; to Native Hawaiians, the relationship with these natural elements is one of family and kinship.

The Native Hawaiian cultural practices identified as currently associated with the University of Hawaii Mauna Kea Science Reserve Master Plan project area can be categorized as two general types: (a) practices with active behaviors involving both observable activities with material results and their inherent values or beliefs; and (b) practices with more passive behaviors which seek to produce nonmaterial results. The former type of behaviors involves such activities as the gathering and collecting of natural resources for various

purposes, the deposition of *piko*, and the funerary release of cremated human remains. Uses such as these generally have associated beliefs and values, as indicated in the preceding section (*see Table 2*). The latter type of behaviors involves more experiential activities focused on “becoming one” with natural setting; that is, behaviors relating to spiritual communication and interaction that reaffirm and reinforce familial and kinship relationships with the natural environment.

Several potential traditional cultural properties were identified within the Science Reserve Master Plan project area. These included the entire mountain region of Mauna Kea, several of the distinctive *pu‘u* that dominate the summit region, the shallow lake, and several foot and horse trails which access the summit region from the lower slopes of the mountain. Several of these properties comprise physical manifestations which reinforce cultural mythologies and relationships.

## **EVALUATION OF IDENTIFIED NATIVE HAWAIIAN CULTURAL PRACTICES AND PROPERTIES**

### ***Traditional and Customary Practices***

For purposes of evaluating the significance of the Native Hawaiian cultural practices, features, and beliefs identified in association with the Science Reserve Master Plan project area, it would be useful to consider them in terms of the three types of informant claims that were defined earlier in the Introduction section of the present report. Information obtained by Maly in his oral history and consultation study (1999) suggests that several of the identified practices and beliefs would appear to fall within the category of traditional and customary practice claims. These would be claims which would lie within the purview of Article XII, Section 7, of the Hawaii State Constitution (“Traditional and Customary Rights”), particularly as reaffirmed in 1995 by the Hawaii State Supreme Court in the decision commonly referred to as the “PASH decision,” and further clarified in the 1998 decision in “*State v. Hanapi*,” and which would include various cultural practices and beliefs associated with the general geographical area of the summit region, rather than a clearly definable property or site. While certain other practices, such as prayer and ritual observances involving the construction of new *kuahu* (altars), or the releasing of cremated human remains rather than interment on *pu‘u*, might seem to be contemporary cultural practices, they may as well be considered to be reasonable cultural developments evolving from earlier traditional practices.

A general familiarity with the content of traditional Hawaiian culture – both in its tangible material aspects and, perhaps to a somewhat lesser degree, its immaterial and behavioral aspects, indicated nothing unusual among the identified practices. While the geographical setting of the Mauna Kea, and especially the distinctive landscape of the summit region, may not be matched elsewhere within the Hawaiian Islands, none of the identified cultural practices would appear to be particularly unique to the Science Reserve Master Plan project area; similar practices traditionally took place in other settings throughout the islands.

### ***Traditional Cultural Properties***

Several potential traditional cultural properties were identified within the Science Reserve Master Plan project area, including the entire mountain region of Mauna Kea, several of the distinctive *pu‘u* which dominate the summit region, the shallow lake, and several foot and horse trails which access the summit region from the lower slopes of the mountain. As defined earlier, traditional cultural property claims are the only ones strictly falling within the purview of the historic preservation process. Such claims would involve traditional practices and beliefs of Native Hawaiian informants and cultural practitioners that (a) are associated with a definable physical property (an entity such as a site), (b) are founded in the history of the local community, (c) contribute to the maintenance of the cultural identity of the community, and (d) demonstrate a historical continuity of practice or belief up to the present. Additionally, a potential traditional cultural property must be able to



demonstrate its historical significance in terms of established evaluation criteria, such as those of the National Register of Historic Places (CFR 1981) and/or the Hawaii Register of Historic Places, to qualify as a legitimate traditional cultural property within the historic preservation context.

The claims for several of the summit region *pu'u* – specifically for Kekahau'ula, Lilinoe, and Makanaka, and for the shallow lake and adjacent *pu'u* collectively known as Waiau, certainly would seem likely to qualify them as traditional cultural properties which meet the National Register test for historical significance because the entities (a) are tangible physical properties, (b) appear to have sufficient integrity – that is, the ability to convey their significance, and (c) meet one or more of the four basic National Register criteria. As sites, all four have clearly recognizable and definable physical boundaries. While knowledgeable informants and cultural practitioners acknowledge that several of the *pu'u* have been damaged by past construction activities, they also appear to believe that the *pu'u* have not been so substantially damaged as to destroy their integrity. And finally, by reason of their association with significant figures in Hawaiian cultural mythology (Kukahau'ula, Lilinoe), and as acknowledged traditional areas for burials (Makanaka) and ritual practices (Waiau), these four properties would seem to satisfy at least one or two of the four basic National Register Criteria: Criterion (A) by association with events that have made a significant contribution to the broad patterns of Hawaiian history, and Criterion (B) by association with the lives of persons significant in the Hawaiian past.

To satisfy Criterion (A), the direct association of a specific site with a significant event, or pattern of events, in Hawaiian history (either written documentary or oral traditional history) would have to be established. All four properties – Kukahau'ula, Lilinoe, Waiau, and Makanaka – would appear to satisfy this criterion because of associated traditional cultural practices and/or the cultural values they represent, as indicated by information provided by many of the knowledgeable informants and cultural practitioners.

To satisfy Criterion (B), the direct association of a specific site with a person significant in Hawaiian history (either written documentary or oral traditional history) would have to be established. National Register Bulletin No. 38 notes that the terms “persons” can mean both “persons whose tangible, human existence in the past can be inferred on the basis of historical, ethnographic, or other research,” as well as legendary and mythological “persons” who exist only in the cultural traditions of a group (Parker and King 1991:11). As the personification of important characters in local traditional Hawaiian mythological history, both Kukahau'ula and Lilinoe certainly would seem to meet the requirement of specific persons of significance in traditional Hawaiian legend and myth.

It should be noted that this evaluation of Kukahau'ula, Lilinoe, and Waiau as traditional cultural properties concurs with a preliminary determination of the SHPD staff (*see Figures 3 and 4, and related discussion*) that the three features, with the definition of Kukahau'ula expanded to incorporate the cluster of three *pu'u* which form the summit of Mauna Kea, are believed to qualify as traditional cultural properties on the basis of traditional Native Hawaiian cultural practices and beliefs associated with them. SHPD staff concurrence should also be noted with regard to another *pu'u*, Poli'ahu, that had been identified in the Maly study as a potential traditional cultural property. While the current name of the latter feature might seem to indicate association with a significant mythological personage, it has been pointed out that while Poli'ahu as manifest by snow has long been traditionally associated with the upper slopes of Mauna Kea, the named assignment to a specific *pu'u* was a relatively recent historic period designation made in 1892 by W.D. Alexander during the mapping of Mauna Kea (McEldowney 1982:A-21), and not an earlier Native Hawaiian designation. Thus the feature would not seem to meet the criteria for definition as a traditional cultural property.

Finally, with regard to the various named foot and horse trails that ascended to the summit region and which were identified in the Maly study (1999) as potential traditional cultural properties, it seems likely that they are primarily historic period routes and not specific features of Native Hawaiian tradition; rather than following specific established routes up the slopes of Mauna Kea, travelers in earlier times were apparently guided by distinctive features of the landscape such as *pu'u* and ridgelines (McEldowney 1982:A-15,16).

## ***Contemporary Cultural Practices***

With regard to the current practices identified by Maly (1999) as contemporary cultural practices, it would seem that they all bear close enough relationships to earlier traditional cultural practices associated with the upper slopes and summit region of Mauna Kea so that no purpose would be served by distinguishing them as something different. Furthermore, as has been pointed out previously, it is likely that they represent reasonable cultural evolution from earlier traditional practices.

## ***Concluding General Evaluation***

Based on an evaluation of the findings of the present cultural impact assessment study made in reference to (a) the known content of traditional Hawaiian culture and (b) the National Register Criteria as clarified by National Register Bulletin No. 38, it is believed that with the exceptions noted above, most of the Native Hawaiian cultural practices, features, and beliefs identified as being currently associated with the Mauna Kea Science Reserve Master Plan project area can be considered to be culturally and historically significant. Most, if not all, of the identified practices and beliefs would seem to qualify as traditional and customary cultural practices within the meaning of the Hawaii State Constitution, while the principal *pu'u* and the shallow lake with adjacent *pu'u* would seem to satisfy the criteria for being regarded as a legitimate traditional cultural property. Finally, none of the identified practices and beliefs would seem to represent strictly contemporary cultural practices or beliefs lacking some measure of traditional connection.

## ***Mauna Kea Summit Region as a Cultural Landscape***

As was discussed earlier, SHPD staff have recently indicated that they will be proposing a historic district designation for the summit region of Mauna Kea which they believe will meet the eligibility criteria for inclusion in both the Hawaii State and the National Register of Historic Places. A historic district is defined as a historic property that "...possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS 1990:5).

The approximate boundary of the proposed historic district, provisionally referred to as the "Mauna Kea Summit Region," incorporates the virtually the entire Science Research summit area, extending beyond limits of the reserve, and also includes portions of the Natural Area Reserve. The proposed district includes the total of 93 archaeological sites identified within the Science Reserve, three landscape features within the reserve believed to qualify as traditional cultural properties, and the Mauna Kea Adze Quarry Complex situated within the Natural Area Reserve.

Consideration of the properties included within this proposed historic district, and their associated practices and beliefs, suggests it to represent a type of historic property best referred to as a cultural landscape. A cultural landscape is a geographical definable area that clearly reflects patterns of occupation and land use over a long time period, as well as the cultural values and attitudes which guide and regulate human interaction with the physical environment. Based on the Native Hawaiian traditional cultural practices and beliefs associate with Mauna Kea, as documented in the Maly (1999) oral history and consultation study, the proposed historic district could perhaps even more appropriately be considered to be a special type of cultural landscape referred to by the National Park Service as ethnographic landscapes: "those landscapes imbued with such intangible meanings that they continue to be deemed significant or even sacred by contemporary people who have continuous ties to the site or area". Such an ethnographic landscape would seem to be embodied in the concept of "cultural attachment" used by Maly (1999:27) to describe the connection of many Native Hawaiians to Mauna Kea.

## ***ASSESSMENT OF POTENTIAL PROJECT EFFECTS***

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The assessment of potential project effects upon the Native Hawaiian cultural practices, features, and beliefs, and potential traditional cultural properties identified as associated with the Mauna Kea Science Reserve Master Plan project area has been done in general accordance with the guidance documents cited in the earlier "Study Methodology" section of the present study. Of particular relevance were Part 800.9 ("Criteria of effect and adverse effect") of the federal regulations of the Advisory Council on Historic Preservation for the "Protection of Historic Properties" (CFR 1986), and Section 13-275-7 ("Determining effects to significant historic properties") of the DLNR draft administrative "Rules Governing Procedures for Historic Preservation Review" (DLNR 1998).

### ***Discussion***

The University of Hawaii Science Reserve Master Plan project focuses on the formulation of planning and management strategies to guide and regulate any proposed future development and use of the project area. The plan does not involve specific development projects with definable impacts, therefore discussion of potential effects and measures for the mitigation of potentially adverse effects must involve consideration of a range of possible effects and mitigation measures.

Direct effects are those caused by an action and which occur at the same time and place, while indirect effects are those caused by an action and are further removed in time and/or distance, but can still be reasonably foreseen. Cumulative effects are those which result from the incremental effect of actions which, taken together with similarly minor past, present, and future effects, over time become significant.

There are two principal types of actions the direct effects of which have potential to adversely effect the Native Hawaiian cultural practices, features, and beliefs associated with the Science Reserve Master Plan project area: (a) maintenance programs and routine operations, and (b) planned development and construction projects. Both types of actions could result in long-term effects that could damage, reduce, or destroy the integrity of the traditional cultural resources.

Planned development and construction projects are also the principal type of actions the indirect effects of which have potential to adversely effect the Native Hawaiian cultural practices, features, and beliefs associated with the Science Reserve Master Plan project area. This could potentially occur as the result of increased access to and use of the Mauna Kea summit region by the public for various recreation activities, and would also constitute long-term effects.

The integrity of the spiritual and sacred quality of the landscape of Mauna Kea's summit, and astronomy's relationship to the cultural landscape, appears to be a crucial issue with the future activities in the Science Reserve. Given the viewpoints expressed in the informant interviews, and research on the mountain's cultural importance, a common concern is the perceived lack of respect on astronomy's part for the Native Hawaiian cultural practices, features and beliefs. At Mauna Kea, however, a potential bridge may exist between the current study of astronomy and the Hawaiian cultural beliefs. Although the specific functions of the shrines clustered around the summit have not been identified through the interviews of knowledgeable informants, it is believed that they represent symbols of spiritual or heavenly worship offered by individuals or families closely linked to the mountain. It is known that the Polynesian voyagers studied and used the constellations as a navigational guide. A validation of Mauna Kea's astronomical and spritual importance was a recent visit to the summit shrine complex by some crew of the Hokuleia voyaging canoe, prior to their leaving for the South Pacific. Astronomers also share a deep respect for the natural elements and the heavens, but need to better understand the Native Hawaiian people's deep beliefs

tied to the physical landscape, its signs and meanings. The Master Plan and Management Plan propose to bring together the knowledge and values of the traditional culture to appropriately direct the future management of the Science Reserve, with ongoing involvement and wisdom of a kahu/kupuna council to be jointly involved in advising the management of the mountain.

The existence of both the shrine complexes and Keanakakoi Adze Quarry on the summit plateau region reiterates a fundamental aspect of Native Hawaiian culture; the integration of the spiritual and religious aspects of life with secular activities of daily living. The adze quarry is essentially a tool making activity, an equivalent of manufacturing or industry involving changing the landscape for functional purposes. That this activity co-existed side by side with what seem to be worship shrines indicates that all activities are imbued with spirituality and that issues of compatibility was resolved through the attitude and protocol with which activities were pursued. A protocol that includes requesting permission from the *aina*, *kupuna* and *akua*, expresses appreciation for the generosity and bounty of nature and follows practices of stewardship is the key to appropriateness. The basic conceptual difference between this indigenous use of the mountain's sacred summit area for a lithic industry, and the modern day use of the summit for the study of the stars by astronomers is the issue of appropriate protocol and respect. The Master Plan demonstrates respect for the resources of land, ecology, and culture, while the Management Plan can provide a new start for cooperative stewardship of the mountain's resources with the Native Hawaiian people.

### ***Concluding Assessment***

Based on an evaluation of the Native Hawaiian cultural practices, features, and beliefs identified as currently associated with the Mauna Kea Science Reserve Master Plan project area, and a general consideration of the potentially adverse direct and indirect effects that might result from future development and use of the summit region, it is obvious that a comprehensive plan for both the short-term and long-term management of the Science Reserve Master Plan project area is vital for the protection and preservation of significant traditional cultural resources. The Master Plan minimizes potential direct and indirect impacts to cultural practices, features and beliefs through the careful limits set upon future development within the proposed Astronomy Precinct and restrictive design guidelines. The Management Plan proposes specific necessary actions to protect the cultural resources and traditional cultural access rights and uses.

## **POTENTIAL MITIGATION MEASURES**

### ***SHPD Historic Preservation Plan***

As mentioned earlier in the Introduction section of the present report, the staff of the SHPD are currently preparing for the University of Hawaii a Historic Preservation Plan for the Mauna Kea Science Reserve Master Plan project area. As presently conceived, this plan will consist of two major essential components: (a) an information component which described the significant historic properties of Mauna Kea and the Mauna Kea Science Reserve, and (b) a management component which identified potential impacts of proposed development and appropriate measures through which potentially adverse effects could be avoided or mitigated.

The management component of the preservation plan will deal two principal topics: (a) plans for specific development projects and related activities, and (b) plans for the long-term management of historic properties within the Science Reserve Master Plan project area. The former topic will address in detail the direct and indirect adverse effects that might potentially result from specific development projects and related activities, and propose a range of mitigation measures to avoid or minimize adverse effects. The latter topic will address in detail long-term management plans for interpretive development, monitoring,

routine consultation with Native Hawaiian organizations and individuals, cultural uses, and continued inventory of historic properties.

### ***Potential Mitigation Measures***

One general mitigation measure of value would be the preparation of an appropriate programmatic agreement which would provide a mechanism by which interested parties could reach a mutual understanding on what historic preservation review and compliance measures would be applicable to defined classes of development and use actions within the Science Reserve Master Plan project area. A vital component of any such agreement would close and meaningful consultation with the Native Hawaiian community, especially cultural practitioners who utilize the summit region for various purposes.

With regard to planned development and construction projects, procedures essentially the same as those presently contained in the draft SHPD administrative rules should be followed to assure that sufficient effort is given to the identification and evaluation of traditional cultural resources that might be effected by any specific proposed project. The procedures contained in the draft SHPD administrative rules generally parallel the federal historic preservation review process usually referred to as the "Section 106 Review." Basic elements of this review process would include the following: (a) inventory survey to identify all cultural resources within a specified project area; (b) evaluation of the significance of all identified cultural resources; (c) assessment of the potential effects of a project upon significant cultural resources; (d) determination of appropriate mitigation measures to avoid or minimize potentially adverse effects upon significant cultural resources; (e) identification and treatment of potential burial sites; (f) consultation with Native Hawaiian individuals and organizations; and (g) preparation of written agreements to project-specific preservation and management issues.

Perhaps the single most significant mitigation measure that could be implemented would be the restriction of virtually all future planned development and construction projects to the proposed 525-acre Astronomy Precinct. This area represents less than five percent of the entire Science Reserve. The Astronomy Precinct area has been carefully situated to exclude undeveloped *pu'u* and the concentrations of shrine features near the summit, so as to greatly minimize potential adverse direct effects upon the cultural resources of the summit region. All of the undeveloped *pu'u* in the Science Reserve are protected from future astronomy development, reflecting the stated wishes of many Native Hawaiians interviewed in the oral history process, that these culturally significant landforms be preserved. Further, only three shrines are located within the Astronomy Precinct, and these will not be directly affected by construction activities with a proposed minimum buffers of 200 feet from any proposed observatory locations. Importantly, the proposed siting for new observatories avoids interference with visual connections between the shrines and the significant *pu'u* cultural landforms.

With regard to the long-term management of cultural resources within the Mauna Kea Science Reserve Master Plan project area, a series of specific management plans could be formulated to address a wide range of issues. As with any other planning activities, close and meaningful consultation with Native Hawaiian individuals and organizations should be undertaken. Specific management plans could include the following:

1. Monitoring plan involving systematic strategies to monitor the condition of cultural resources to determine what activities and uses within the project area are effecting cultural resources, the nature and intensity of such effects, and appropriate mitigation measures to avoid or minimize any adverse effects;
2. Plan to complete the identification and documentation of cultural resources within the project area;
3. Burial treatment plan for the protection of known and suspected burials sites, and for the treatment of any burials inadvertently discovered during planned development

and construction projects. Preparation of a burial treatment plan should involve consultation with the Hawai'i Island Burial Council;

4. Cultural use plan to provide for access to and use of traditional cultural properties and other culturally significant areas by Native Hawaiian practitioners;
5. Interpretation plan that would designate sites and areas appropriate for public access for purposes of education and recreation, and could include such elements as self-guided and guided tours, informational signage, brochures, and displays; and
6. Enforcement plan to provide for protection of natural and cultural resources and systematic enforcement of all rules and regulations governing access to and use of the Science Reserve Master Plan project area.

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