

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Forestry and Wildlife  
Honolulu, Hawaii 96813

December 12, 2008

Chairperson and Members  
Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

Land Board Members:

**SUBJECT:** Approval in Concept for the Re-designation of the Kapapala Koa Management Area, TMK (3) 9-8-001:014 comprising approximately 1,257 Acres, to the Kau Forest Reserve, Kau District, Hawaii.

**Background:** The importance of koa (*Acacia koa*) in the Hawaiian landscape as well as the culture and traditions of its people cannot be overstated. Native koa ecosystems serve as watershed recharge areas while providing recreational opportunities and important wildlife habitat. Koa is considered a vital species for healthy populations of endemic birds and insects. The tree itself is has a myriad of uses in Hawaiian culture and traditions.

In recognition of the importance of koa in Hawaii, the Board on October 27, 1989, under agenda item F-7 (Exhibit A) authorized the withdrawal of an estimated 1,100 acres from its lease to Kapapala Ranch (TMK 9-8-01:010, Exhibit B) for koa forestry, watershed management, recreation, and forest bird habitat protection.

In the 1990s the Polynesian Voyaging Society was unsuccessful in its attempts to locate a tree of sufficient stature for construction of a voyaging canoe. This prompted the Division to alter its management objectives to focus on production of canoe logs. A big step toward this goal was fencing the property perimeter in 1995 to exclude cattle, which are a major impediment to koa regeneration.

On August 19, 2004 the parcel was officially sub-divided by the County of Hawaii Planning Department, representing approximately 1,257 acres, and on November 19, 2004, under agenda item C-1 (Exhibit C), the Board recommended the formal creation of the Kapapala Koa Management Area (KKMA), authorizing the Division to create a management plan with a focus on canoe log production while incorporating other cultural, educational and ecological aspects. On June 27, 2005 Executive Order 4109 (Exhibit D) was issued, officially setting aside the KKMA to the Division - the only dedicated koa canoe log management area in the state.

A principal step in the development of a management plan for this unit is a comprehensive field inventory of koa resources. In 2006 and 2007 the Division conducted timber survey work in the lower third of the parcel in order to quantify the amount of koa suitable for canoe construction presently or in the future. In keeping with the goal of using the parcel for education, the Division cooperated with the Forest Team program at Hawaii Community College to perform this survey. The Board recently authorized the Chair to negotiate a contract with the Carnegie Institute to use new remote sensing technology to further this survey with the goal of a comprehensive management plan.

**Project Location:** Based on recent field survey work, the KKMA is comprised of approximately 1,257 acres corresponding to parcel TMK parcel 9-8-001:014 (Exhibit D). The KKMA is zoned Agriculture by the State Land Use Commission, and Agriculture-20 by Hawaii County. Elevations range from 3,640 to 5,100 feet. The KKMA is adjacent to two large State-managed forest reserves (Ka'u and Kapapala) on the slopes of the Mauna Loa, collectively comprising one of the largest intact blocks (over 100,000 acres) of the state's remaining native forests.

**Discussion:** The Division is dedicated to the intent of the KKMA as well as the Board-approved principles guiding management decisions for this area. However, for this particular set aside, the "Koa Management Area" designation threatens to jeopardize effective planning, management and related enforcement activities due to a lack of applicable statutes and rules. Changing the status of this parcel would place the area under broad forest reserve management guidelines and afford it the protection of the statutes and administrative rules that exist for the Forest Reserve System.

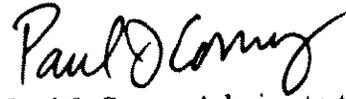
Therefore the Division seeks the cancellation of Executive Order 4109, to be replaced with a new executive order incorporating the KKMA into the Forest Reserve System as the Kapapala Section of the existing Kau Forest Reserve. The Division proposes to continue to manage this unit in accordance with the intent, terms and conditions of the Board's November 19, 2004 approval of item C-1.

**Recommendations:**

That the Board:

1. Approve of and recommend to the Governor cancellation of Executive Order 4109 and issuance of an Executive Order to re-designate TMK (3) 9-8-001:014 as a set aside to the Division of Forestry and Wildlife, to be known as the Kapapala Section of Kau Forest Reserve, Kau District, Hawaii, with the stipulation that the subject lands continue to be managed in accordance with the intent, terms and conditions of the Board's November 19, 2004 approval of item C-1.
2. Authorize the Division of Forestry and Wildlife to conduct a public hearing to add the subject lands to the Kau Forest Reserve, under provisions of Section 183-11, Hawaii Revised Statutes, as amended.
3. Authorize the Chair to set a time, date and location for a public hearing and appoint a hearing master.

Respectfully Submitted,



Paul J. Conry, Administrator

Attachments

APPROVED FOR SUBMITTAL:



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Laura H. Thielen, Chairperson





STATE OF HAWAII  
 DEPARTMENT OF LAND AND NATURAL RESOURCES  
 DIVISION OF LAND MANAGEMENT  
 P. O. BOX 121  
 HONOLULU, HAWAII 96808

AQUACULTURE DEVELOPMENT  
 PROGRAM  
 AQUATIC RESOURCES  
 CONSERVATION AND  
 ENVIRONMENTAL AFFAIRS  
 CONSERVATION AND  
 RESOURCES ENFORCEMENT  
 CONVEYANCES  
 FORESTRY AND WILDLIFE  
 LAND MANAGEMENT  
 STATE PARKS  
 WATER AND LAND DEVELOPMENT

October 27, 1989

Board of Land and  
 Natural Resources  
 Honolulu, HI

HAWAII

Gentlemen:

Subject: Department of Land and Natural Resources, Division  
 of Forestry and Wildlife Request for Set Aside of a  
 Portion of the Kapapala Government Land Situate at  
 Kapapala, Ka'u, Hawaii

STATUTE: Section 171-11, Hawaii Revised Statutes

APPLICANT: Department of Land and Natural Resources, Division  
 of Forestry and Wildlife

PURPOSE: Koa management purposes

FOR: Set aside of 1100.00 acres + subject to  
 confirmation by survey, together with an access  
 easement, being a portion of the Kapapala  
 Government Land situate at Kapapala, Ka'u, Hawaii,  
 further described as Tax Map Key:3rd/9-8-01:05 10 ← NOTE  
 (portion), that portion colored and labeled Land  
 Board Exhibit "A" which is attached and appended to  
 the basic file.

LAND TITLE STATUS: Subsection 5(b) lands

ZONING: State Land Use Commission: Agriculture  
 County of Hawaii CZO: Agriculture - 20 Acre (A-20a)

REMARKS: The Division of Forestry and Wildlife (DOFAW)  
 proposes to designate approximately 1100.00 acres +  
 of the Kapapala Government Land as a Koa management  
 area, to be managed by DOFAW for commercial koa  
 timber production, with consideration for  
 recreation, forest bird habitat and watershed  
 values.

RECOMMENDATION: That the Board:

- A. Approve of and recommend to the Governor of  
 Hawaii, the issuance of an Executive Order  
 setting aside approximately 1100.00 acres + to  
 be under the management and control of the  
 Department of Land and Natural Resources,  
 Division of Forestry and Wildlife, for Koa

ITEM F-7

EXHIBIT A

management purposes subject to the above-listed terms and conditions, which are by this reference incorporated herein, in addition to the following:

1. DOFAW shall be responsible for the subdivision requirements applicable to the subject request;
  2. Prior to application for the subdivision with the County of Hawaii, DOFAW shall submit for review and acceptance by the Chairperson, metes and bounds descriptions together with the survey maps of the subject parcel together with the applicable access easement;
  3. Such other terms and conditions as may be prescribed by the Chairperson.
- B. Grant DOFAW an immediate right-of-entry to the subject area for surveying, fencing, reforestation, enforcement and maintenance in accordance with conditions which may be prescribed by the Chairperson.

Respectfully submitted,



MIKE K. SHIMABUKURO  
Land Management Administrator

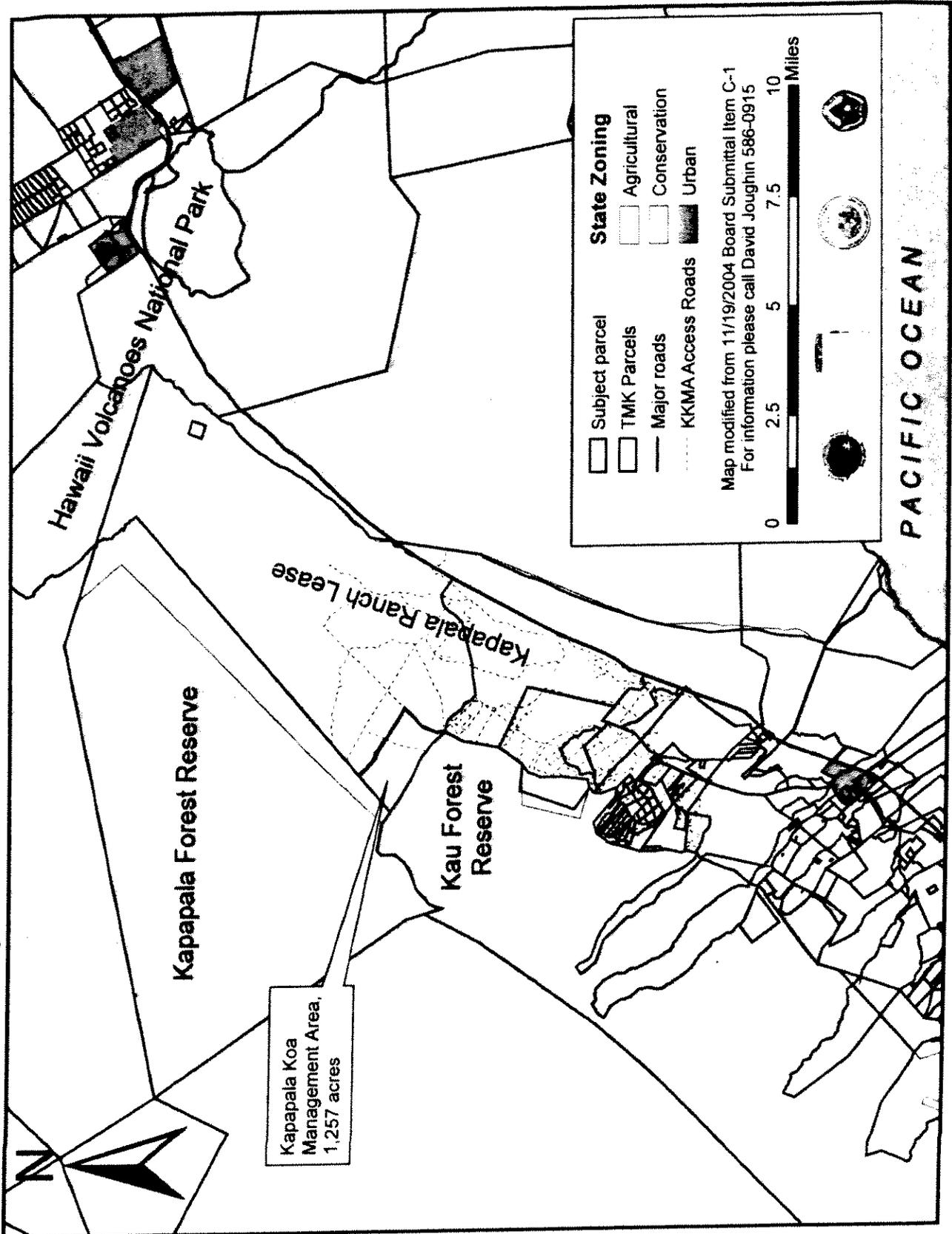
Approved for submittal:

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WILLIAM W. PATY, Chairperson

Exhibit B. Kapapala Koa Management Area





STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Forestry and Wildlife  
Honolulu, Hawaii 96813

November 19, 2004

Chairperson and Members  
Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

Land Board Members:

**SUBJECT:** Establishment of the Kapapala Koa Canoe Forest Management Area in  
Kau, Hawaii, Approval of Corresponding Objectives, and Authorization to  
Develop a Management Plan to Implement the Objectives

**Background:** Hawaii's majestic koa (*Acacia koa*) trees are part of the islands' unique cultural heritage. Early Hawaiians prized the exceptional wood of koa, using it for canoes and other wooden objects such as paddles and bowls. Equally important, are native koa forest ecosystems that provide significant wildlife habitat, watershed recharge areas, and recreational opportunities. Koa is also a keystone species for endemic Hawaiian wildlife. This fast growing tree is considered one of the more important host plants for endemic insects and birds.

One of the critical events that spoke to the state of Hawaii's natural forest environment, was the Polynesian Voyaging Society's unsuccessful search for koa logs of sufficient stature, to use in its canoe building efforts. Unfortunately most of Hawaii's remarkable "canoe trees" have been harvested over the past 10 centuries of Hawaii's human civilizations.

It is estimated that it takes up to 125 years or more, to grow a koa tree large enough for a voyaging canoe (minimum length of 35-45 foot clear log sections and diameter of 48 inches or more). That period may be shortened if specific koa logs are identified for canoes now, and forestry prescriptions (e.g. thinning, pruning) are applied to favor the growth of those trees for canoe logs. Unless committed efforts are made to grow koa for canoe logs on a sustainable basis now, no Hawaiian voyaging canoes will be built in the future using traditional methods, i.e. from a single large log. Instead racing and smaller style canoes will need to be fabricated from smaller koa logs joined or spliced together.

Identifying and dedicating a unique native forest area for koa management, was first pursued by the Division fifteen years ago. On October 27, 1989 the Board of Land and Natural Resources approved a set-aside to the Division of approximately 1,100 acres (subject area)

Item C-1

**EXHIBIT C**

November 19, 2004

of parcel 9-8-01:010 at Kapapala, Kau District, to the Division for the purposes of koa forestry, recreation, forest bird and watershed management, and stipulated that:

1. The Division would be responsible for pursuing subdivision of the parcel.
2. The Division was granted a right-of-entry to the subject area for the purposes of fencing, reforestation, enforcement and maintenance in accordance with conditions that may be prescribed by the Chairperson.

The Division began managing the set-aside area in 1989 to promote native forest protection and restoration, representing the first stages in establishing a koa forest management area. During the 1990's the Division refined its envisioned management of koa in the set-aside, to a focus on koa canoe logs. In 1995, the Division established a perimeter fence around the set-aside area. Cattle were periodically removed, but often encroached back into the set-aside area. Periodic weed control operations have been conducted, and public access for hunting and recreation in adjacent forest reserves has been provided through the set-aside area. The subject parcel was officially sub-divided into parcels 9-8-01:010 1-A (ranch lease) and 1-B (set-aside) by the County of Hawaii on August 19, 2004.

**Objectives:** The proposed concept of establishing a koa canoe management area at the subject parcel has several components. A management plan will be developed and implemented to restore, protect and utilize a Hawaiian native forest for cultural, environmental and educational purposes. Seven major goals of the management plan and project will be to:

- 1) Preserve Hawaii's unique natural and cultural inheritance for future generations, by fostering knowledge and respect for Hawaii's native forests, in a way that inspires better care of its natural environment.
- 2) Protect threatened tropical forest habitat and promote environmental policies and practices, that address biological sustainability and human well-being, by identifying and integrating relevant traditional Hawaiian natural resource stewardship models with current Western management strategies.
- 3) Develop natural resource stewardship models that involve a wide range of constituent groups.
- 4) Involve youth through cooperative programs with the Department of Education, University of Hawaii, and other school and education institutions.
- 5) Provide wood workers with portions of harvested trees that are not processed as canoe logs.
- 6) Involve other constituency groups (e.g. canoe clubs, forest management entities, and cultural organizations).

7) Provide compatible opportunities for public uses such as hunting and recreation.

The growth and production of koa trees and other native plants for use in the making of traditional Hawaiian canoes will be prioritized. The management plan will include an educational component developed in cooperation with the State Department of Education (DOE). Lesson plan modules and training opportunities will focus on culture, recreation, economics, mathematics, biology, sciences, business, and on-the-job vocational experiences as they relate to management and stewardship of the koa canoe management area. While DOE participation in canoe log management will be significant, Hawaiian cultural organizations, canoe clubs and other interested entities will also be invited to participate.

Extra koa wood from trees harvested for canoe log purposes, and other timber and non-timber forest products, will also be provided for use in educational, traditional Hawaiian cultural and commercial activities. One possibility would be to supply craftsmen and the local wood industry with extra wood or other forest products, and seek their assistance in working with students and community members in processing such materials.

**Project Location and Parcel Status:** Based on recent field survey work, the set-aside area is comprised of approximately 1,257 acres corresponding to parcel 1-B of the subdivision of TMK parcel 9-8-001:010 (Exhibit A), being also a portion of Parcel 1 of General Lease S-5374. Parcel 1-B is zoned Agriculture by the State Land Use Commission, and Agriculture-20 by Hawaii County. Elevation in parcel 1-B ranges from 3,640 to 5,100 feet (*See Exhibit B for detailed description*). Parcel 1-B is adjacent to two large State-managed forest reserves (Ka'u and Kapapala) on the slopes of the Mauna Loa on the island of Hawai'i, comprising one of the largest intact blocks (over 100,000 acres) of the state's remaining native forests (Exhibit A).

**Existing Vegetation:** Dominant forest vegetation on the property consists primarily of varying mixtures of ohia-lehua (*Metrosiderous polymorpha*) and koa. The ohia-lehua forest stand structure ranges continuously in size and age from seedlings to old-growth individuals. In contrast, the Koa forest stand structure is essentially in three age classes: old-growth relic trees (>100 yrs), moderate aged trees (15 to 40 yrs), and younger trees aged less than 10 years old.

The majority of the current old-growth koa trees on the property do not contain single log sections that are large or sound enough for full size traditional Hawaiian canoe construction. In some cases, these trees could provide shorter sections that may be used in construction of 4-man and fishing canoes, or spliced together to make larger canoes. In contrast to the old-growth Koa trees, the young to mid-aged trees have growth forms more suitable for construction of the traditional long canoes, but they presently lack the required girth or height. Preliminary approximations of the growth rates and their future projection, suggest that a percentage of the trees could begin to be harvested for canoe construction within 20 to 30 years, with the majority

of the current moderate-aged population harvestable within 40 years (*See Exhibit C for conceptual forest management objectives*).

In addition to the dominant canopy tree species (ohia and koa) on the parcel, there are numerous native species such as hapu'u (*Cibotium splendens*) and amaumau (*Sadleria cyatheoides*), tree species such as sandalwood (*Santalum spp*), naio (*Myoporum sandwicense*), kolea (*Myrsine spp.*) and kopiko (*Psychotria hawaiiensis*), mountain vines such as maile (*Alyxia olivaeformis*) and ie'ie (*Freycinetia arborea*), and groundcover plants such as alaalawainnui (*Peperomia spp.*).

Complementing the wide range of plant species present on the parcel are numerous native bird species that typically are found in the mature koa and ohia-lehua trees that occur across the entire parcel. Native bird species noted included the i'iwi (*Vestiaria coccinea*), apapane (*Himatione sanguina*), i'o (*Buteo solitarius*), 'akiapōlā'au (*Hemignathus munroi*), Hawai'i creeper (*Oreomystis mana*), Hawai'i 'ākepa (*Loxops coccineus*), 'elepaio (*Chasiempis sandwichensis*) and 'amakihī (*Hemignathus virens*).

**Next Steps:** The Division believes that this project will serve to enhance cooperation between State government regulatory agencies, and several diverse public groups including schools, the Hawaiian community, canoe clubs, natural resource protection associations, and environmental groups. Benefits from the proposed project would also extend to educational opportunities for the public, by providing a site where community groups and school students can gain experience in the benefits of sustainable forest resource management.

Initially the project will focus on stakeholder involvement, education and public outreach. Activities will include an inventory of existing natural and cultural resources, facilitated planning sessions and community field trips. The deliverable would be a forest management plan that will serve as a model for the state of Hawai'i. The plan will address sustainable natural resource management and traditional Hawaiian land management ethics and principals. A balance between local community and state-wide interests will be developed concerning access to resources, socio-economic development and educational opportunities. Concurrently, best management practices involved with selective harvesting of forest products from a native forest will also be identified and addressed.

The Division believes that through the Board's approval of the area designation, objectives and approach detailed above, the resources and partnerships needed to make this project a success will be attracted. Potential collaborators include the Department of Education, University of Hawai'i, other schools, the Polynesian Voyaging Society, the Nature Conservancy, the Hawai'i Canoe Racing Association, and other private foundations and community groups.

RECOMMENDATION

That the Board:

1. Approve the establishment of the Kapapala Koa Canoe Forest Management Area on parcel 1-B of the subdivision of TMK parcel 9-8-001:010, with the corresponding objectives detailed above.
2. Authorize the Division to develop a Management Plan to implement these objectives for subsequent Board approval, prior to initiating active management of the area.

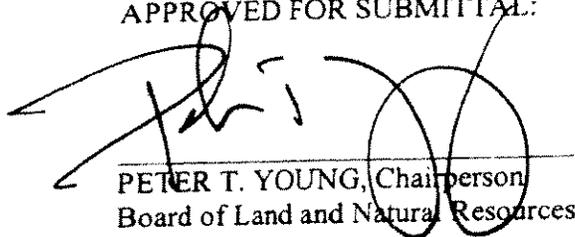
Respectfully submitted,



PAUL J. CONRY  
Administrator

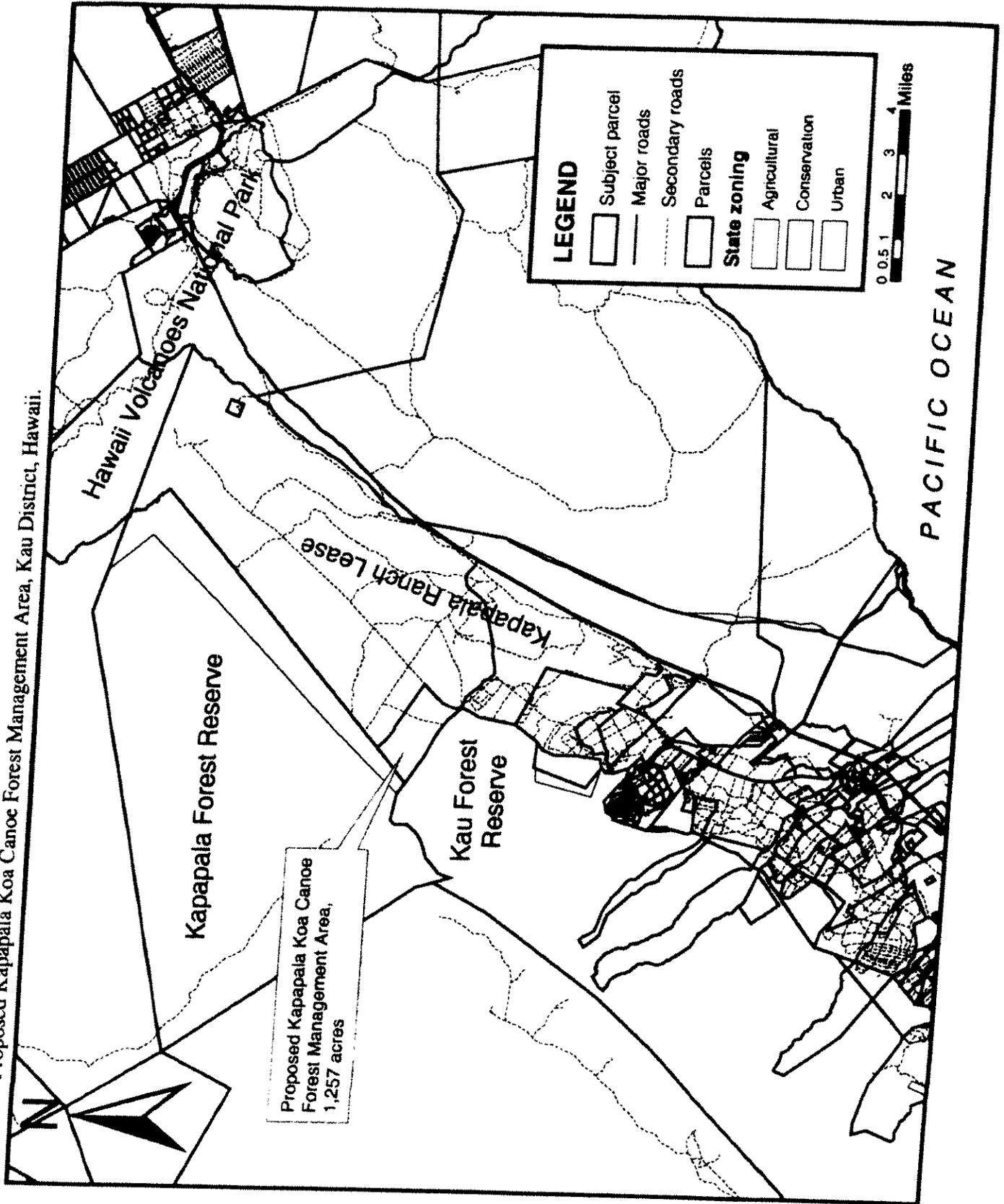
Attachments  
(Exhibits A, B, and C)

APPROVED FOR SUBMITTAL:



PETER T. YOUNG, Chairperson  
Board of Land and Natural Resources

Exhibit A. Proposed Kapapala Koa Canoe Forest Management Area, Kau District, Hawaii.



## **Exhibit B. Project Property Description**

### ***Location***

The proposed project area is comprised of parcel 1-B of the subdivision of TMK parcel 9-8-001:010 (approximately 1,257 acres). Parcel 1-B is located in Ka'u adjacent to Ka'u Forest Reserve, Kapapala Forest Reserve, and the state leased Kapapala Ranch. The area is enclosed with five-foot tall cattle and hog guard fence, and has access gates at the four corner junctions. Access roads run the perimeter of the property, with one road approximately bisecting the width of the area. The area ranges in elevation from 3,640 to 5,100 feet, with slopes ranging from 6 to 20% or an elevation change of nearly 775 feet/mile.

### ***Soil series description***

There are four soil series in the area with the majority in the Kahalu'u series. The other major soil series on the parcel include areas containing the Kiloa series, a Hydrandept-Tropofolist Association, and the Kapapala series. The Hydrandept-Tropofolist Association consists of thin, organic soils (4"-12") overlying fragmental Aa or pahoehoe lava in elevation areas of 2,000 to 6,000 feet, which receive 80 to 200 inches of annual rainfall. Slopes are dominantly 6 to 20% and small, swampy areas of stunted and sparse vegetation are mapped with this association.

For the most part the soils series present are differentiated by whether the underlying lava flow is Aa or pahoehoe. In all cases, the erosion hazard on these thin soils is considered slight to none. The small area containing soils of the Kapapala series would be considered to have the greatest forest growth potential because of the deeper (48") well-drained loams that formed in recent volcanic ash, and the mildly alkaline to neutral subsoil overlying pahoehoe lava.

### ***Current vegetation and stand description***

Hawaii's majestic koa (*Acacia koa* Gray.) trees are part of the islands unique cultural heritage. Early Hawaiians prized koa's exceptional wood, using it for canoes and other wooden objects such as paddles and bowls. Today, it is the premier Hawaiian timber for furniture, interior work and woodcrafts. Equally important, native koa forest ecosystems provide significant wildlife habitat, watershed recharge areas and recreational opportunities. Koa is a keystone species for endemic Hawaiian wildlife. This fast growing tree is considered one of the more important host plants for endemic insects and birds. Insects and larva commonly found on koa provide a major food source for native forest birds. Native Hawaiian birds use koa for feeding, nesting, roosting, and other aspects of their life cycle. The survival and success of many wildlife species at Kapapala depends on the presence of koa as a forest dominant.

Dominant vegetation on the property consists primarily of varying stand mixtures of ohia-lehua (*Metrosiderous polymorpha*) and koa (*Acacia koa*). The different stand mixtures appear related to soil series distribution. In any given area, the ohia-lehua stand tree population structure appears to range from seedlings to old-growth individuals. In contrast, the Koa stand tree population appears to consist primarily of three age classes: old-growth relic trees (>100 yrs), moderate aged trees (15 to 40 yrs), and younger trees aged less than 10 years old. Some Koa seedling regeneration is present throughout the parcel, primarily along the border and access road cuts. Within the interior contiguous stands, however, little Koa seedling regeneration is apparent. This could be due to the presence of a thick ground grass layer in some areas, ungulate grazing pressure or low-light understory conditions from a dense over-story Ohia-lehua canopy in other areas.

The majority of the current populations of old-growth koa trees on the property are unsuitable for traditional Hawaiian canoe construction, because of poor growth form or soundness rather than required diameter. Although many of the old-growth trees have diameters of approximately four feet, the length of clear bole is far less than the 35 to 45 feet desired for canoe construction. The typical growth form of the older trees is that of low, large multi-branching canopies that preclude their use in traditional 45-foot canoe construction, but in some cases may allow for use in construction of four-man and fishing canoes.

In contrast to the old-growth Koa trees, the moderate aged trees (15 to 40 years) that are evident along the perimeter and interior roads, have a clear bole length of 20 to 35 feet and a mean diameter-at-breast-height (DBH) of 44.7 cm or 18 inches - although some trees reach 31 inches DBH. The current growth form of a majority of these young Koa trees is more suitable for construction of traditional long canoes, but they lack the required girth of 3.5 to 4.5 foot DBH.

Preliminary approximations of the growth rates suggest that a percentage of the trees could begin to be harvested for canoe construction within 20 to 30 years, with the majority of the current population harvestable with 40 years. Beyond 50 years however, the availability of suitable canoe log trees could decrease substantially, because of the low occurrence of koa seedling regeneration throughout the interior of forest stand areas.

#### ***Associated Native flora and fauna***

In addition to the dominant canopy tree plant species (ohia and koa) on the parcel, the presence of numerous native non-timber species was noted. Those species noted included several ferns such as hapu'u (*Cibotium splendens*) and amaumau (*Sadleria cyatheoides*), tree species such as sandalwood (*Santalum spp*), naio (*Myoporum sandwicense*), kolea (*Myrsine spp.*) and kopiko (*Psychotria hawaiiensis*), mountain vines such as maile (*Alyxia olivaeformis*) and ie'ie (*Freycinetia arborea*), and groundcover plants such as alaalawainnui (*Peperomia spp*).

Complementing the wide range of plant species present on the parcel were numerous native avian species. The presence of the birds in such large numbers as were noted, is probably related to the mature ohia-lehua trees (average canopy heights within the 50-60 foot range) that occur across the entire parcel. Native bird species noted included the i'iwi (*Vestiaria coccinea*), apapane (*Himatione sanguina*) and i'o (*Buteo solitarius*). Little indication of feral pig activity was found throughout the parcel.

## **Exhibit C. Conceptual Forest Management Objectives To Be Considered**

The overall goal of the proposed project is to develop and implement a management plan, focusing on the sustainable utilization of the forest resources for traditional Hawaiian cultural practices and product use, that involves students from the Department of Education, University of Hawai'i and other educational institutions in Hawaii.

### **Forest management concepts to be addressed in the management plan:**

1. Description of selective harvest techniques for existing Acacia koa trees suitable for the production of traditional Hawaiian canoes.
2. Management of existing Acacia koa tree stands for the sustainable production of canoe logs in the short-term (1-40 years).
3. Implementation of specific management techniques for the sustainable production of canoe logs in the long-term (1-100 years).
4. Incorporation of an educational component developed in cooperation with the State Department of Education.
5. Maintenance and enhancement of the project area to allow for sustainable traditional Hawaiian gathering practices involving non-timber resources.
6. Maintenance and enhancement of the project area for native species.
7. Provision of compatible opportunities for public uses such as hunting and recreation.

### **Specific Forest Management Actions and Practices:**

1. Selectively harvest existing Acacia koa trees suitable for the production of traditional Hawaiian canoes: Locate and identify all trees currently meeting specifications for producing the different Hawaiian canoe styles. It is estimated that there are currently less than 10 trees suitable for racing canoes, and approximately 20 trees suitable for 4-man or fishing canoes. Design harvesting access routes using State of Hawaii Best Management Practices Guidelines, and to minimize impact on native traditional use plant species. The latter can be accomplished by conducting vegetation surveys along the possible access routes.
2. Manage existing Acacia koa tree stands for the sustainable production of "canoe-log" trees in the short-term (1-40 years): The younger aged population of trees evident along the borders and access road are not uniformly distributed along the length of the road, but occur in small groupings. Initially, individual trees can be marked and repeatedly measured to determine differences in growth rates among trees within a "group." Within each group, the larger trees exhibiting the most desirable growth form can be the focus of a release thinning of surrounding smaller trees exhibiting suppressed growth to stimulate annual DBH growth for "crop" trees. It is anticipated that a portion of the trees could achieve sufficient girth for canoe construction in 20 years, and be available to begin harvesting when the supply of currently harvestable trees ends. At this time, it is anticipated that the number of suitable trees present, could permit an annual harvest rate of three trees per year for 20 years. The location of these trees along current access roads suggests that minimal additional site disturbance would be required during harvest.

3. Implement specific management techniques for the sustainable production of "canoe-log" trees in the long-term (1-100 years): Based young trees with good growth form presently occur only along roads and adjacent disturbed sites; it is possible that one optimum growth environment for Koa seedlings is found in narrow, linear and smaller canopy openings. Such openings act to create a light-environment that promotes rapid, straight, un-branched height and bole growth. Creating such long, linear openings could be done first, using the selected access routes to harvest the existing available trees. It is anticipated that the site scarification associated with the harvest, will allow for germination from the existing Koa seed bank. Where germination is not sufficient, seeds collected from the same area can be prepped and broadcast within the openings to increase seedling densities. Additional smaller openings of various sizes can be created in selected sites within the parcel, to determine the optimum canopy opening and viability of the proposed reforestation techniques. It is anticipated that the additional access routes and artificial canopy openings created, would result in a newer population and age structure of koa trees for future management and harvest regimes.
4. Maintain and enhance the project area to allow for sustainable traditional Hawaiian gathering practices of non-timber resources: An inventory of plant species deemed important to traditional Hawaiian cultural practices, will be conducted to determine the availability of such resources. Appropriate levels of utilization will be established to permit sustainable harvesting and gathering by individuals or groups from the Hawaiian community. Establishment and cultivation of some traditional plants such as Palapalai (*Microlepis strigosa*) could also be attempted in the lower portion of the parcel, where the current ground cover is a thick mat of understory grass species, that appears to inhibit regeneration of any tree species.
5. Maintain and enhance the project area as suitable habitat for native avian species: The current canopy composed primarily of Ohia-lehua and koa provides good habitat for the native avian fauna. The small scale, low-impact, site disturbances relating to timber and non-timber harvesting and management can serve diversify the canopy, while maintaining large contiguous areas of mature over story native trees. The creation of additional openings within the stands, could permit the diversification of certain plant and avian species populations.

**Overview of natural resources and forest values that will be protected, enhanced or created by the proposed management activities:**

The proposed management activities can provide both opportunities for sustainable utilization and conservation of forest resources in the Kapapala parcel. Low impact selective harvesting of small numbers of mature Koa trees, will minimize environmental impacts and permit the protection and maintenance of a diverse natural Hawaiian forest. The proposed koa regeneration technique of creating linear canopy gaps can enhance the diversity of forest flora and fauna communities, while ensuring a sustainable supply of individual trees for use in traditional Hawaiian practices. The management plan will ensure access and sustainable utilization of non-timber forest resources for traditional Hawaiian cultural practices. The implementation of this plan should serve to enhance cooperation between a diverse range of resource management, educational, and cultural organizations and groups.

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

JUN 27 2005

Ref. No.: EO4109  
Author: LD-WTM

MEMORANDUM

TO: Paul Conry, Administrator  
Division of Forestry and Wildlife

FROM: *JA* Harry Yada, Acting Administrator  
Land Division

*Chalene E. Uroki*

SUBJECT: **Governor's Executive Order No. 4109 Setting Aside Public Lands;  
Kapapala, Kau, Island of Hawaii; Tax Map Key: 3<sup>rd</sup>/9-8-01**

Enclosed for your records is one copy of Governor's Executive Order No. 4109 setting aside 1257.734 acres to the State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) for the Kapapala Koa Management Area.

At its meetings of October 27, 1989, agenda item F-7 and October 13, 1995, agenda item F-4 (copies enclosed), the Board of Land and Natural Resources approved of and voted to recommend to the Governor the issuance of the subject executive order.

The subject lands were withdrawn from General Lease No. S-5374 to Kapapala Ranch and has already been fenced by DOFAW. This area is now being utilized for forest management techniques such as selective harvesting, ground preparation to encourage natural regeneration, supplemental planting, etc.

If there are any questions, please feel free to contact Wesley T. Matsunaga at (808) 974-6203. Thank you.

Enclosures

cc: Land Board Member  
Central Files, District Files

EXHIBIT D



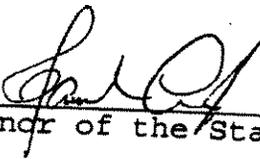
FOR THE KOA MANAGEMENT AREA AND ACCESS PURPOSES, to be under the control and management of the State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife, being that parcel of land situate at Kapapala, Kau, Island of Hawaii, Hawaii, identified as "Kapapala Koa Management Area," containing an area of 1,257.734 acres, together with access over existing trails and the Ainapo Road, more particularly described in Exhibit "A" and delineated on Exhibit "B," both of which are attached hereto and made parts hereof, said exhibits being respectively, a survey description and survey map prepared by the Survey Division, Department of Accounting and General Services, State of Hawaii, both being designated C.S.F. No. 23,859 and dated September 30, 2004.

SUBJECT, HOWEVER, to the condition that upon cancellation of this executive order or in the event of non-use or abandonment of the premises or any portion thereof for a continuous period of one (1) year, or for any reason whatsoever, the Division of Forestry and Wildlife shall, within a reasonable time, restore the premises to a condition satisfactory and acceptable to the Department of Land and Natural Resources, State of Hawaii.

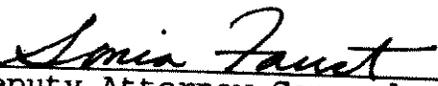
SUBJECT, FURTHER, to disapproval by the Legislature by two-thirds vote of either the Senate or the House of Representatives or by majority vote of both, in any regular or special session next following the date of this Executive Order.

IN WITNESS WHEREOF, I have hereunto set my hand and  
caused the Great Seal of the State of Hawaii to be affixed.  
Done at the Capitol at Honolulu this 15<sup>th</sup> day of  
June, 2005.

JAMES R. AIONA JR.

  
**ACTING GOVERNOR**  
Governor of the State of Hawaii

APPROVED AS TO FORM:

  
Deputy Attorney General

Dated: May 23, 2005

STATE OF HAWAII

Office of the Lieutenant Governor

THIS IS TO CERTIFY That the within is a true copy of  
Executive Order No. 4109 setting aside land for public  
purposes, the original of which is on file in this office.

IN TESTIMONY WHEREOF, the Lieutenant  
Governor of the State of Hawaii, has  
hereunto subscribed his name and caused  
the Great Seal of the State to be affixed.



DONE in Honolulu, this JUN 16 2005 day of

\_\_\_\_\_, A.D. 2005



STATE OF HAWAII

SURVEY DIVISION

DEPT. OF ACCOUNTING AND GENERAL SERVICES  
HONOLULU

C.S.P. No. 23,859

September 30, 2004

KAPAPALA KOA MANAGEMENT AREA

Kapapala, Kau, Island of Hawaii, Hawaii

Being a portion of the Government (Crown) Land of Kapapala.

Beginning at the south corner of this parcel of land, the coordinates of said point of beginning referred to Government Survey Triangulation Station "UWEKAHUNA" being 31,367.99 feet South and 57,203.43 feet West, thence running by azimuths measured clockwise from True South:-

- 1. 98° 40' 44" 117.42 feet along the remainder of the Government (Crown) Land of Kapapala;
- 2. 88° 16' 182.00 feet along Kau Forest Reserve, Governor's Proclamation dated October 17, 1930;
- 3. 138° 45' 2017.00 feet along Kau Forest Reserve, Governor's Proclamation dated October 17, 1930;
- 4. 127° 41' 1793.00 feet along Kau Forest Reserve, Governor's Proclamation dated October 17, 1930;
- 5. 116° 40' 3677.00 feet along Kau Forest Reserve, Governor's Proclamation dated October 17, 1930;

EXHIBIT "A"

- |     |              |   |
|-----|--------------|---|
| 6.  | 125° 18' 30" | 4205.30 feet along Kau Forest Reserve, Governor's Proclamation dated October 17, 1930;      |
| 7.  | 231° 25' 30" | 5886.60 feet along Kapapala Forest Reserve, Governor's Proclamation dated October 17, 1930; |
| 8.  | 317° 00' 10" | 815.17 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 9.  | 325° 20' 20" | 453.28 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 10. | 303° 59' 50" | 328.68 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 11. | 310° 50'     | 641.32 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 12. | 304° 30' 10" | 581.40 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 13. | 283° 11' 50" | 631.60 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 14. | 312° 48' 50" | 361.47 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 15. | 308° 09' 10" | 121.53 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 16. | 298° 58'     | 230.63 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 17. | 296° 23'     | 383.06 feet along the remainder of the Government (Crown) Land of Kapapala;                 |
| 18. | 311° 23'     | 256.64 feet along the remainder of the Government (Crown) Land of Kapapala;                 |

- 19. 302° 21' 50" 611.16 feet along the remainder of the Government (Crown) Land of Kapapala;
- 20. 322° 43' 15" 375.92 feet along the remainder of the Government (Crown) Land of Kapapala;
- 21. 299° 20' 564.00 feet along the remainder of the Government (Crown) Land of Kapapala;
- 22. 304° 17' 50" 864.15 feet along the remainder of the Government (Crown) Land of Kapapala;
- 23. 303° 03' 34" 2008.77 feet along the remainder of the Government (Crown) Land of Kapapala;
- 24. 301° 31' 20" 348.48 feet along the remainder of the Government (Crown) Land of Kapapala;
- 25. 303° 32' 296.12 feet along the remainder of the Government (Crown) Land of Kapapala;
- 26. 308° 03' 177.59 feet along the remainder of the Government (Crown) Land of Kapapala;
- 27. 48° 27' 10" 595.48 feet along the remainder of the Government (Crown) Land of Kapapala;
- 28. 44° 47' 40" 136.25 feet along the remainder of the Government (Crown) Land of Kapapala;
- 29. 47° 35' 50" 2411.30 feet along the remainder of the Government (Crown) Land of Kapapala;
- 30. 29° 41' 50" 147.25 feet along the remainder of the Government (Crown) Land of Kapapala;
- 31. 24° 42' 46" 1423.06 feet along the remainder of the Government (Crown) Land of Kapapala;
- 32. 23° 23' 15" 166.87 feet along the remainder of the Government (Crown) Land of Kapapala;

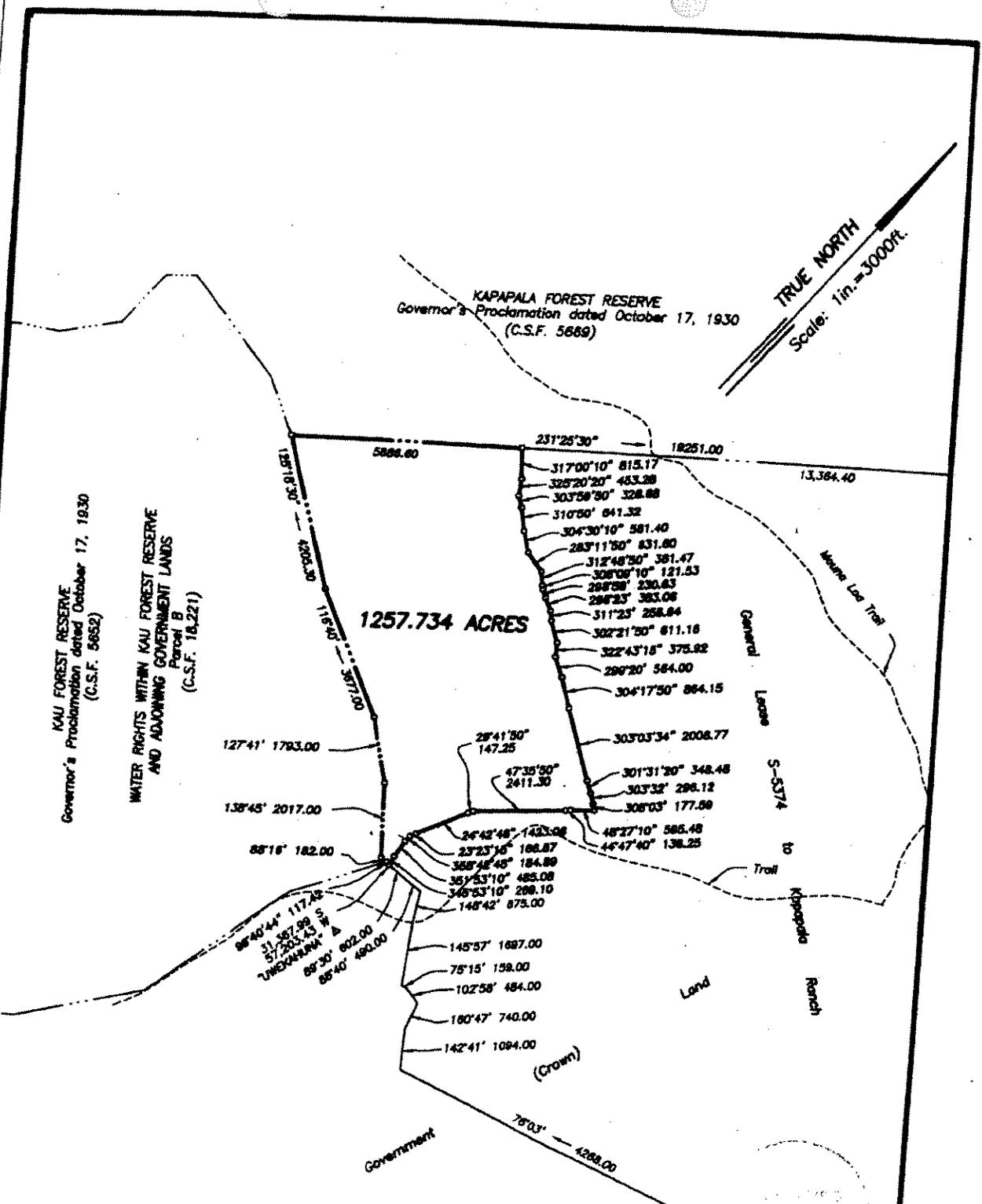
- 33. 358° 42' 45" 184.89 feet along the remainder of the Government (Crown) Land of Kapapala;
- 34. 351° 53' 10" 485.08 feet along the remainder of the Government (Crown) Land of Kapapala;
- 35. 345° 53' 10" 269.10 feet along the remainder of the Government (Crown) Land of Kapapala to the point of beginning and containing an AREA OF 1257.734 ACRES.

Together, with, access over existing trails and the Ainapo Road (access to Ainapo Trailhead) over the Government (Crown) Land of Kapapala.

SURVEY DIVISION  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
STATE OF HAWAII

By: Glenn J. Kodani  
Glenn J. Kodani  
Land Surveyor gm

Compiled from CSF 23858  
and other Govt. Survey Records.



**KAPAPALA KOA MANAGEMENT AREA**  
 Kapapala, Kau, Island of Hawaii, Hawaii

Scale: 1 inch = 3000 feet

REDUCED NOT TO SCALE

**EXHIBIT "B"**

JOB H-275(04)  
 C. BK.

TAX MAP: 9-8-01

SURVEY DIVISION  
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
**STATE OF HAWAII**

C.S.F. NO. 23,850

JOL September 30, 2004