

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife

May 26, 2023

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

Land Board Members:

SUBJECT: REQUEST THE APPROVAL OF AN ACQUISITION OF A PERPETUAL CONSERVATION EASEMENT BY THE DIVISION OF FORESTRY AND WILDLIFE, KEALAKEKUA, SOUTH KONA, ISLAND OF HAWAI'I TAX MAP KEYS (3) 7-9-001:013, 014; and 015 (POR)

PRIVATE LANDOWNER:

Hāloa 'Āina, L.L.C., a Hawai'i limited liability company, with an undivided 100.00% interest, as Fee Owner, whose business and mailing address is 45-574 Plumeria St, P.O. Box 1677, Honoka'a, Hawai'i 96727 ("Seller").

LEGAL REFERENCE:

Sections 107-10, 171-11 and 171-30, Hawai'i Revised Statutes (HRS), as amended.

LOCATION:

Conservation easement over privately-owned lands situated at Kealakekua, South Kona, Island of Hawai'i, identified as a portion of Tax Map Keys: (3) 7-9-001:013, 014; and 015, as shown on the attached map labeled Exhibit A.

AREA:

7-9-001:013	942.081 acres, more or less
7-9-001:014	1,154.259 acres, more or less
<u>7-9-001:015</u>	<u>636.766 acres, more or less</u>
TOTAL:	2,733.106 acres, more or less

ZONING:

State:	Agriculture
County of Hawai'i CZO:	Agriculture (AG-20)

CURRENT USE:

The property is currently used for forestry production, primarily forest products such as sandalwood oil and related products. There is a single residential dwelling and

structures used for commercial forestry and associated ecotourism activities (sandalwood processing building, educational building, and nursery) located on the portions of the property excluded from the conservation easement.

CONSIDERATION:

The purchase price will be the lower of either funds raised for the purchase, or the fair market value (fmv) as established by an appraisal conducted by an independent appraiser contracted by the State Department of Land and Natural Resources (Department) and reviewed and approved by the Department and the U.S. Department of Agriculture Forest Service.

PURPOSE:

The conservation easement (CE) will be used to preserve the forest values of the parcel in perpetuity.

CHAPTER 343- ENVIRONMENTAL ASSESSMENT:

Pursuant to Section 343-5(a)(I), HRS, an environmental assessment (EA) is not required where State or county funds are being used for the acquisition of unimproved real property. As the subject lands are unimproved, an EA is not required.

REQUIREMENTS:

- 1) Obtain a CE appraisal to determine the value of the properties to be acquired.
- 2) Provide survey maps and descriptions for the conservation easement area according to State DAGS standards.
- 3) Obtain a title report for the privately-owned property subject to review and approval by the Department.
- 4) Obtain a Phase I environmental site assessment and, if this Phase I identifies the potential for hazardous materials release or the presence of hazardous materials, conduct a Phase II environmental sampling and analysis plan and perform any and all remediation, abatement and disposal as may be warranted and as satisfactory to the standards required by the Federal Environmental Protection Agency and/or the State Department of Health, all at no cost to the State and to the satisfaction of the Department.

BACKGROUND:

The Hāloa 'Āina CE is needed to permanently protect 2,733.106 acres, more or less, of dry montane forest (4,500 to 5,500 elevation) located in the South Kona region of the island of Hawai'i. Hawaiian dry forests are the rarest ecosystem type in Hawai'i with more than 90% of their original area lost. The project area's forest provides essential habitat for native forest birds and insects, as well as key tree species including 'iliahī or Hawaiian sandalwood (*Santalum paniculatum*).

‘Iliahi, prized internationally for its unique aroma, is found in the rare dry forest at Hāloa ‘Āina. ‘Iliahi was formerly abundant, but by the mid-1850s, the sandalwood trade in Hawai‘i had collapsed due to over-harvesting and much of Hawai‘i’s forest land was put into ranching, including the Hāloa ‘Āina property. Decades of forest clearing, cattle grazing, and feral sheep grazing degraded the remaining native forest on the property. The current owner purchased the 2,780-acre property in 2010 to steward and restore this forest. ‘Iliahi is an internationally significant forest product, and Hāloa ‘Āina is working to restore this species and the surrounding rare dryland and mesic forest ecosystems on which it depends.

A forest inventory completed in 2021 characterized the existing forest cover on the property. Most of the property (73% of the property acreage) is characterized as open koa (*Acacia koa*)-māmane (*Sophora chrysophylla*) forest. This cover type is the result of a long history of grazing cattle. The overstory is very sparse, with occasional koa and ‘iliahi reaching overstory size. The sub-canopy contains naio (*Myoporum sandwicense*), māmane, and ‘a‘ali‘i (*Dodonaea viscosa*) with a grassy groundcover over a‘a. The other large plant cover type on the property is characterized as alien grassland (23% of the property acreage). The grassland is a mix of kikuyu (*Pennisetum clandestinum*), meadow rice (*Ehrharta stipoides*) and other pasture weeds, and contains native species such as: ‘a‘ali‘i, naio, māmane, ‘iliahi, ‘ōhi‘a (*Metrosideros polymorpha*), pūkiawe (*Leptecophylla tameiameiae*), and koa. There are also small components of open-‘ōhi‘a forest with native shrubs over younger a‘a flows on the property (4% of the property acreage).

In addition to historic declines, populations of ‘iliahi in the region have continued to decline due to ongoing threats such as unsustainable logging, housing development, cattle grazing, invasive species, and low natural recruitment. With high land value in the region, active subdivision and land sales are happening immediately adjacent to Hāloa ‘Āina. The CE will forfeit the right of the landowner to subdivide, protecting the property from development in perpetuity and ensuring this property stays a working and recovering native forest. This forest will increase economic opportunities to rural residents in South Kona through the sustainable management of ‘iliahi, one of the most valuable woods in the world.

This project will connect over 400,000 contiguous acres of adjacent managed forests including two Forest Legacy project conservation easements also held by the state (Kealakekua Mountain Reserve and Kaawaloa), forested lands managed by Kamehameha Schools for forestry and conservation, and Hawai‘i Volcanoes National Park, creating a large contiguous managed forest landscape. Benefits of the CE include the protection of lands from development and sustainable management of valuable native tree species such as ‘iliahi and koa, along with other native tree and shrub species. These forests will provide habitat for native wildlife present in the area including the ‘lo or Hawaiian hawk (*Buteo solitarius*) and the ‘ōpe‘ape‘a or Hawaiian hoary bat (*Aeorestes semotus*). The project will also provide public watershed benefits including replenishment of the aquifer and protection of pristine coastal waters through reforestation which will reduce soil erosion and sedimentation into the ocean.

REMARKS:

The Division of Forestry and Wildlife was assisted in conducting due diligence for this acquisition by Department's Land Division and the Office of the Attorney General.

The Division of Forestry and Wildlife has secured funding from both federal and County of Hawaii for this acquisition as follows:

U.S. Forest Service Forest Legacy Program:	\$3,000,000
<u>County of Hawai'i:</u>	<u>\$1,300,000</u>
TOTAL:	\$4,300,000

County of Hawai'i funds are from the Public Access, Open Space, and Natural Resources Preservation Fund, which supports goals including natural resource and watershed protection and forest preservation, in accordance with the Hawai'i County Charter 10-15. (H.C.C. 10-15). Forest Legacy Program Funds provided by the U.S. Forest Service protect environmentally important forest areas that are threatened by conversion to non-forest uses, promote forest protection, habitat protection and other public benefits as well as support "working forests" that produce economically sustainable and commercially viable forest products. Due to requirements from the County of Hawai'i and the U.S. Forest Service, both the state and the County of Hawai'i will co-hold the CE. Additional state, federal, county, or private funds, not currently secured, may be used for this acquisition to pay up to the fmV, as provided by the appraisal.

The Seller contracted a survey of the CE area. A survey map and description of the CE area was prepared by a licensed surveyor and reviewed and accepted by Department of Accounting and General Services Survey Office (**Exhibit B**) for use in the preparation of the property descriptions and maps. The property consists of three parcels, with the proposed 2,733.106-acre CE within a total property of 2,780.318 acres. The 47.212-acre area excluded from the CE contains developed portions of the property, including a ranch house, sandalwood oil processing facility, educational building, and a plant nursery.

A draft CE was negotiated with the landowner and is attached as **Exhibit C**. The CE details terms and conditions for management of the CE (protected property). The purpose of this CE is to preserve conservation values including a healthy, functioning native forest watershed, sustainable production of commercial wood products, maintenance of wildlife habitat, open space, recreational, research and educational values of the protected property. The CE contains prohibitions for subdivision and development, limits on allowed structural improvements and restrictions on harvesting of forest products to ensure sustainable forest management and maintain over 75% forest cover.

The CE includes a baseline documentation report, to be signed by the CE co-holders and the landowner at closing, that documents current conditions of the protected

property, and will be used as a baseline for annual state monitoring of the easement conditions into the future. The Division of Forestry and Wildlife is required by the U.S.D.A. Forest Service Forest Legacy Program to monitor the property annually to protect the protected property's conservation values.

To meet the requirements under the Forest Service's Forest Legacy Program, Hāloa 'Āina prepared a Forest Stewardship Management Plan (**Exhibit D**). The CE requires the owner to update the Plan every ten (10) years or when the protected property ownership changes. This plan was reviewed and recommended for approval by the state Forest Stewardship Advisory Committee and approved by the Division of Forestry and Wildlife on August 6, 2021. The Plan addresses threat management for wildfire, invasive species, pests and disease, and feral ungulates, and details the restoration of diverse native forest species and sustainable management of sandalwood. Management will include perimeter fencing, invasive ungulate removal, reforestation with native species, invasive plant species removal, timber inventory surveys, and harvest activities. Over the next ten years, the landowner is planning salvage harvest of dead and dying trees and no harvest of live, healthy trees. Other long-term goals include increasing local community and cultural benefits by promoting access to the native forest by community groups and researchers.

The Division of Forestry and Wildlife retained Lehua Environmental Inc. to conduct a Phase I Environmental Site Assessment (ESA) for the Property, which was completed August 3, 2021. The Phase I ESA identified two recognized environmental conditions (REC), described as potential substance spills or leaks at two locations (old water pump houses) on the property. These two REC sites are excluded from the CE area. These REC sites are localized in the pump house areas and are excluded from the CE; therefore, the Division of Forestry and Wildlife believes that the protected property has a low risk associated with hazardous materials impacts from these sites. Additionally, these sites are low risk based on the historic rural use of the property (i.e.: as grazing and unimproved lands) as well as the intended management purpose as working forest. The report concluded that there was no evidence of RECs that could impact the portions of the property encumbered by the CE. Additionally, the CE includes indemnification of the co-holders against all costs, claims, demands, penalties, and damages connected with the release of any hazardous materials on the Protected Property.

The Department contracted for an appraisal, pursuant to section 171-30, HRS. The appraisal is in the process of being completed by John Child and Company. As required by the Forest Legacy Program, the appraisal is required to be compliant with both the Uniform Standards or Professional Appraisal Practice and the Uniform Appraisal Standards for Federal Land Acquisition. The appraisal is subject to review and approval by the U.S. Forest Service, and there is an assigned federal Forest Service staff review appraiser for the project. U.S. Forest Service approval of the appraisal is required to release the federal funds and close the acquisition. The Division of Forestry and Wildlife recommends the appraised value of the CE be accepted, based on the Forest Service review.

The Division of Forestry and Wildlife ordered and reviewed a title report for the Property dated January 5, 2023. As a condition to closing, the Seller will be required to subordinate mortgages. A draft Purchase and Sale Agreement (PSA) between the State and Seller, attached as Exhibit B, is attached for Board's review and approval. Proceeds from the CE may be used toward mortgage obligations. If at any time there is a mortgage balance due to the lender, then the existing mortgage will be subordinate to the conservation easement. The final acquisition documents will require a mortgage subordination document that is signed by the lender.

RECOMMENDATION: That the Board:

1. Authorize the acquisition of the subject CE under the terms and conditions cited above which are by this reference incorporated herein and further subject to the following:
 - A. The terms and conditions of the attached draft CE, as may be amended.
 - B. Review and approval by the Department of the Attorney General.
 - C. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.
2. Delegate authority to the Chairperson to negotiate the final purchase price for the landowner offer based on the appraisal fmv and funding available.
3. Delegate authority to the Chairperson to administer all aspects of the CE.

Respectfully Submitted,



David G. Smith
Administrator

APPROVED FOR SUBMITTAL:



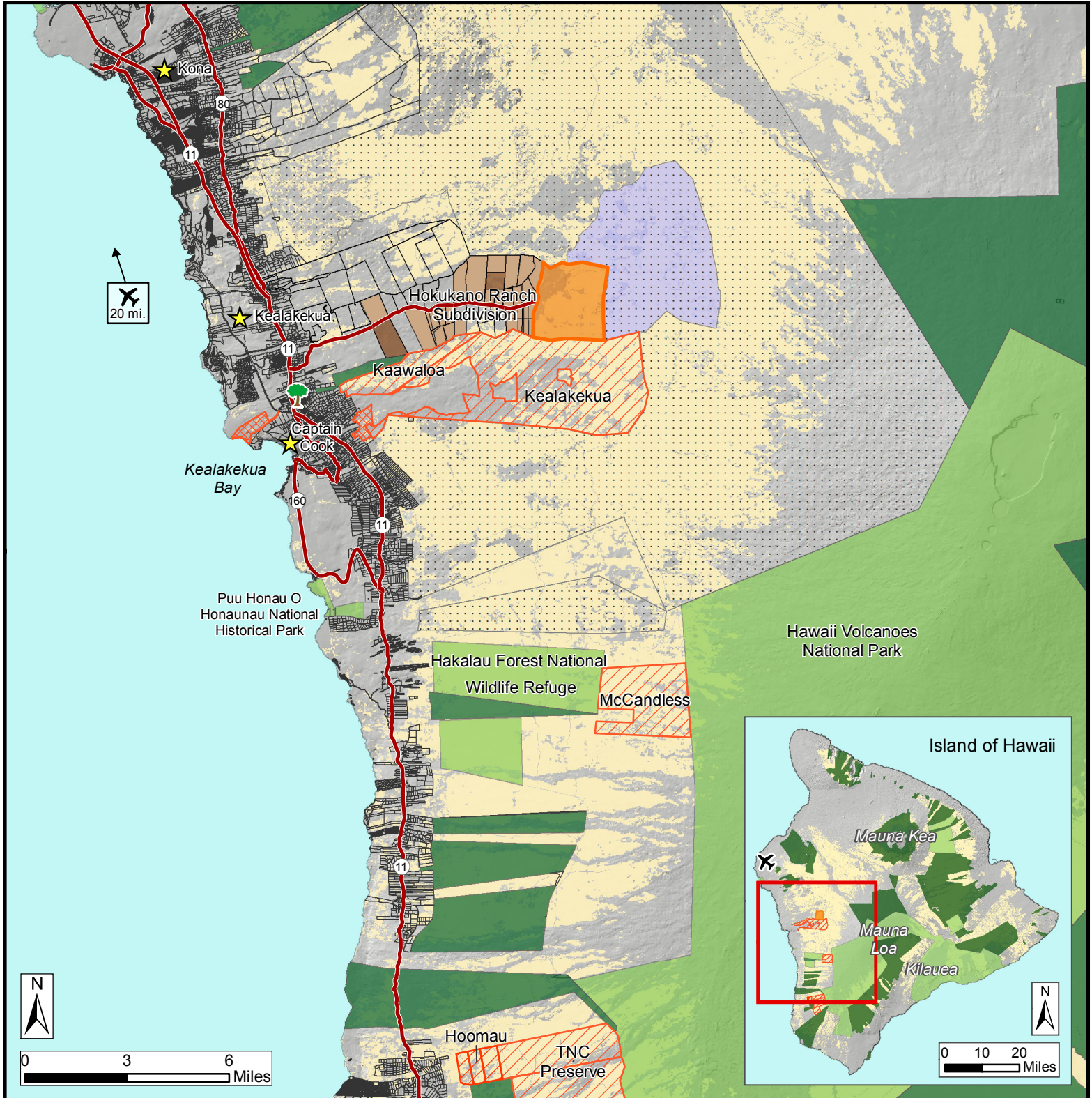
Dawn N.S. Chang, Chairperson

- Exhibit A: Property Map
- Exhibit B: Draft Purchase and Sale Agreement
- Exhibit C: Draft Conservation Easement (CE)
- Exhibit D: Forest Stewardship Management Plan

Haloa Aina Forest Legacy Project

Legend

- Haloa Aina FLP Project (2,780 acres)
- Existing FLP CEs
- State Reserves
- Federally Protected Lands
- Community Forest
- TMA Dry Forest Restoration Project
- KS Lands Managed for Forest Conservation
- Hawaii Islands Land Trust CEs
- FL AON # 1 Priority Landscape (Native Forest in Ag-Zone)
- Cities and Towns
- Major Roads
- Development/Housing Lots or Subdivisions
- Hokukano Ranch Subdivision**
- Remaining Properties for Sale
- Properties Sold in Last 5 Years



**AGREEMENT OF SALE
(Haloa Aina Conservation Easement)**

This is an Agreement of Sale (“Agreement”) dated _____, 2023, between **Haloa Aina LLC**, a Hawai‘i limited liability company (“Seller”), and the **State of Hawaii**, by its Board of Land and Natural Resources (“Buyer”).

RECITALS

A. The address and telephone numbers of the parties to this Agreement are as follows: Telephone numbers are included for information only:

SELLER:

Haloa Aina L.L.C.,
P.O. Box 1677
Honokaa, Hawai‘i 96727
Attn: Wade Lee
wadelee@haloaina.com
Tel: (415) 800-5308
FAX: (415) 495-0541

Copies of any notices to Seller should also be sent to:

Danton Wong
Chun Kerr LLP
First Hawaiian Center
999 Bishop Street, Suite 2100
Honolulu, HI 96813-4443
Attn: Charles Fasi; cfasi@chunkerr.com
Tel: (808) 528-8234
Fax: (808) 664-8611

BUYER:

State of Hawaii
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809-0621
Attn: Dawn Chang, Chairperson
dawn.chang@hawaii.gov
Tel: (808) 587-0401
FAX: (808) 587-0390

Copies of any notices to Buyer should also be sent to:

State of Hawaii
Dept. of Land and Natural Resources
Land Division
1151 Punchbowl Street, Room 220
Honolulu, Hawaii 96813
Attn: Tanya Rubenstein
tanya.rubenstein@hawaii.gov
Tel: (808) 333-6803
FAX: (808) 587-0160

B. The parties expect that Buyer will purchase a conservation easement on certain real property, commonly called the “Haloa Aina” property, located on the Island of Hawaii, Hawaii, Tax Map Key Nos. (2) (3) 7-9-001:013, 014; 015, described in Exhibit B and depicted in Exhibit C, both attached to this Agreement and incorporated herein by this reference, referred to in this Agreement as the “Property.”

THE PARTIES AGREE AS FOLLOWS:

1. **Purchase and Sale.** Seller agrees to sell the Property to Buyer and Buyer agrees to buy the Property from Seller on the terms and conditions set forth herein.

2. **Purchase Price.** The purchase price for the Property is XX (\$) (the “Purchase Price”). The Purchase Price will be payable, in cash or immediately available funds, on Deed Recordation, as defined in Section 7.

3. **Effective Date.** This Agreement will be effective on the date that it is signed by both parties hereto and approved as to form, legality, exceptions and reservations by the Attorney General on behalf of Buyer, as shown on the signature pages to this Agreement (the “Effective Date”).

4. **Conditions Precedent to Closing.** The parties’ respective obligations to close the purchase and sale of the Property are conditioned upon all of the following happening at least one (1) business day before the Closing (as defined in Section 7(a) below):

(a) Buyer has approved the title, physical, and structural condition of the Property not later than May 27 (the “Review Deadline”);

(b) Buyer has approved the environmental condition of the Property by the Review Deadline;

(c) Buyer receives approval by the State of Hawaii, Board of Land and Natural Resources (“BLNR”) to enter into this Agreement and to acquire the Property, which approval is subject to the Board’s sole discretion;

(d) Buyer receives all sources of funding which are to be used together to purchase the Property;

(e) The County of Hawaii receives all approvals necessary to purchase the Property;

(f) Seller has provided Buyer with copies of the Property Information (as defined in Section 5(a)(ii) below) provided to Buyer by the Seller and the results of Buyer’s due diligence. To the best of Seller’s knowledge, the Property Information contains all encumbrances, restrictions, and obligations, both recorded and unrecorded, pertaining to the Property;

(g) All mortgages on the Property are made subordinate to the conservation easement;

(h) Satisfaction of all obligations stated in this Agreement by both Buyer and Seller, within the periods provided in this Agreement (if any).

If any condition precedent is not satisfied or waived by the benefited party, Seller or Buyer may terminate this Agreement by written notice to the other party and to the Escrow Holder; in which event the Parties will have no further obligation to each other under this Agreement and Buyer will not be liable for any damages.

5. **Condition of the Property.**

(a) Buyer and Seller agree that, before the Review Deadline, as defined in Section 4(b) above:

(i) Buyer will have had the opportunity to study all aspects or circumstances of the Property which Buyer deems material or relevant;

(ii) Buyer will have received from Seller the documents described in Exhibit A attached hereto and incorporated by this reference, which sets forth Property-related information (the "Property Information");

(iii) Buyer will have had access to the Property; and

(iv) Buyer will have had the opportunity to make all inspections and verifications which Buyer deems necessary for the completion of Buyer's due diligence review for the transaction covered by this Agreement.

6. **Due Diligence.** Seller has provided to Buyer the Property Information and the opportunity to investigate and review a preliminary title report, the Property Information, and the physical condition of the Property, which investigation and review must be completed on or before the Review Deadline. If Buyer determines that it is dissatisfied with the condition of the Property, then Buyer may terminate this Agreement by delivering written notice to Seller on or before the Review Deadline. If Buyer fails to deliver any such written termination notice to Seller on or before the Review Deadline, then Buyer will be deemed to have elected to proceed to close escrow and acquire the Property.

7. **Escrow and Closing.**

(a) Seller has opened an escrow (the "Escrow") with XX NAME (the "Escrow Holder") for the purpose of consummating the purchase and sale of the Property (the "Closing"). Buyer and Seller will approve and submit joint escrow closing instructions. "Conservation Easement Recordation" which is defined as the date on which the conservation easement is recorded and the Purchase Price paid will occur on or before DATE, unless extended by agreement of the parties; the parties agree that if, despite their best efforts, any County or Federal funding source has not deposited its funds into escrow by DATE, the Closing will be extended for up to thirty (30) days to accommodate the late deposit of such funds.

(b) Buyer and Seller must deliver (or cause to be delivered) all final, fully executed documents and all funds into Escrow at least two (2) business days before the Conservation Easement Recordation.

(c) Seller will pay 100% of any documentary tax or real property transfer tax arising out of the conveyance of the Property. Any other closing expenses, fees, and charges will be borne by the Seller.

8. **Title.** Seller will cause the Property to be conveyed to Buyer by a conservation easement in the form attached hereto as Exhibit D, incorporated herein by this reference (the "Conservation Easement"), a conservation easement interest in the Property, free and clear of all monetary liens and encumbrances, except as shown in Exhibit "C" to the Conservation Easement.

Seller will pay or cause to be paid all property taxes up to the date of recordation of the Conservation Easement.

9. **Title Insurance.** Seller will provide an ALTA standard coverage, owner's policy of title insurance, with regional exceptions, in the full amount of the Purchase Price, insuring that title to the Property is vested in Buyer upon Conservation Easement Recordation subject only to the exceptions noted in Section X. Seller will pay for the cost of standard coverage. If Buyer elects to obtain any endorsements and/or an extended coverage policy, Buyer will pay the difference between ALTA standard coverage and the increased premium for the endorsements and/or extended coverage.

10. **Seller's Promise not to Further Encumber.** Seller may not, without the prior written consent of the Buyer, make any leases, contracts, options, or agreements whatsoever affecting the Property that would in any manner impede Seller's ability to perform hereunder and deliver title as agreed herein.

11. **Seller's Representations.** Seller represents and warrants that:

- (a) Subject to the conditions precedent set forth in Section 4, Seller will, before the Conservation Easement Recordation, have the power to sell, transfer and convey all right, title and interest to a conservation easement in the Property;
- (b) To Seller's actual knowledge, there is no action, suit, litigation, arbitration, or other proceeding pending or threatened that in any manner affects the Property;
- (c) Subject to the conditions precedent set forth in Section 4, Seller has full power and authority to execute and deliver this Agreement and to consummate the transactions provided herein. The persons signing this Agreement for Seller have full power and authority to sign for Seller and to bind it to this Agreement;
- (d) Seller has no knowledge of any violations of any law, order, ordinance, or regulation affecting the Property;
- (e) Seller has not received notice and has no knowledge of, any pending or threatened condemnation of all or part of the Property;

- (f) This Agreement and the other documents to be executed by Seller hereunder, upon execution and delivery thereof by Seller, will have been duly entered into by Seller, and will constitute legal, valid and binding obligations of Seller, subject to the conditions precedent set forth in Section 4, and subject to applicable bankruptcy, insolvency, reorganization, moratorium, or similar laws or equitable principles affecting or limiting the rights of contracting parties generally. Neither this Agreement nor anything provided to be done under this Agreement violates or will violate any contract, document, understanding, agreement, or instrument to which Seller is a party or by which it is bound;
- (g) Seller has no knowledge of any unrecorded agreements affecting the Property;
- (h) Seller represents and warrants that it is not a “foreign person” as defined in Section 1445 of the Internal Revenue Code. Seller’s United States Taxpayer Identification Number is X;
- (i) Seller represents and warrants that it is a limited liability company duly organized, validly existing and in good standing under the laws of the State of Hawaii;
- (j) Seller represents and warrants, that the Property is not subject to any investigation by any governmental authority or any judicial or administrative proceedings alleging the material violation of or liability under any hazardous materials law, or any outstanding written order or agreement with any governmental authority or private party relating to any hazardous materials laws or hazardous materials claims;
- (k) Seller agrees to disclose to Buyer all material findings regarding the condition of the Property that Seller may discover and are not contained in the preliminary title report delivered to Buyer.

12. **Buyer’s Representation.** Buyer represents and warrants that subject to approval by the BLNR, which approval is at its sole discretion, Buyer has all the requisite power and authority to enter into this Agreement and to consummate the transactions contemplated hereby.

13. **Risk of Loss.** All risk of loss will remain with Seller until Conservation Easement Recordation. If the Property is destroyed or damaged after the Effective Date of this Agreement and before Conservation Easement Recordation, then Buyer or Seller may, at their option elect to terminate this Agreement with no damages accountable to Buyer.

14. **Notices.** All notices pertaining to this Agreement will be in writing delivered to the parties hereto by facsimile or email transmission, personally by hand,

courier service or Express Mail, or by first class mail, postage prepared, at the addresses set forth in Recital A. All notices will be deemed given: (a) if sent by mail, when deposited in the mail, first class postage prepared, addressed to the party to be notified; (b) if delivered by hand, courier service or Express Mail, when delivered; or (c) if transmitted by email or facsimile, when transmitted; provided the sender receives no indication the transmittal was unsuccessful. The parties may, by notice as provided above, designate a different address for notices.

15. **Remedies Upon Default.** If Buyer or Seller defaults in the performance of any of their respective obligations under this Agreement, then the defaulting party will, in addition to any and all other remedies provided in this Agreement or by law or equity, have the right of specific performance against the defaulting party.

16. **No Broker's Commission.** Each party represents to the other that it has not used a real estate broker in connection with this Agreement or the transaction contemplated by this Agreement. Each party further represents that it has not and will not pay or receive a broker's commission or finders' fee for this transaction. If any person asserts a claim for a broker's commission or finder's fee against one of the parties to this Agreement, then the party on account of whose conduct the claim is asserted will hold the other party harmless from said claim.

17. **Time of the Essence; Dates.** Time is of the essence to this Agreement. If any date specified in this Agreement falls on Saturday, Sunday or a public holiday, then such date will be deemed to be the succeeding day on which the public agencies and major banks are open for business.

18. **Binding on Successors.** Subject to approval by the Board of Land and Natural Resources and the Seller's Board of Directors, which approvals are at each Board's sole discretion, this Agreement will be binding not only upon the parties but also upon their heirs, personal representatives, assigns, and other successors in interest.

19. **Additional Documents.** Seller and Buyer agree to execute such additional documents, including escrow instructions, as may be reasonable and necessary to carry out the provisions of this Agreement.

20. **Assignment.** Buyer may not assign its interests under this Agreement without the written consent of Seller.

21. **Entire Agreement; Modification; Waiver.** This Agreement constitutes the entire agreement between Buyer and Seller pertaining to the subject matter contained in it and supersedes all prior and contemporaneous agreements, representations, and understandings. No supplement, modification, or amendment of this Agreement will be binding unless executed in writing by all parties. No waiver of any of the provisions of this Agreement will be deemed or will constitute a waiver of any other provision, whether or not similar, nor will any waiver constitute a continuing waiver. No waiver will be binding unless executed in writing by the party making the waiver and agreeable to both parties.

22. **Counterparts.** This Agreement may be executed in counterparts; each of which will be deemed an original and which together will constitute one and the same agreement.

23. **Severability.** Each provision of this Agreement is severable from any and all other provisions of this Agreement. Should any provision(s) of this Agreement be for any reason unenforceable, the balance will nonetheless be of full force and effect.

24. **Governing Law.** This Agreement will be governed by and construed in accordance with the laws of the State of Hawai'i.

25. **Survival of Close of Escrow.** All representations, warranties, covenants, conditions, agreements, and other obligations set forth in this Agreement will survive the Closing and Deed Recordation and will not merge therein unless specifically stated otherwise in this Agreement.

IN WITNESS of the foregoing provisions the parties have signed this Agreement below:

SELLER:

BUYER:

Haloa Aina LLC, a Hawaii limited liability company

STATE OF HAWAII

By: _____

By: _____

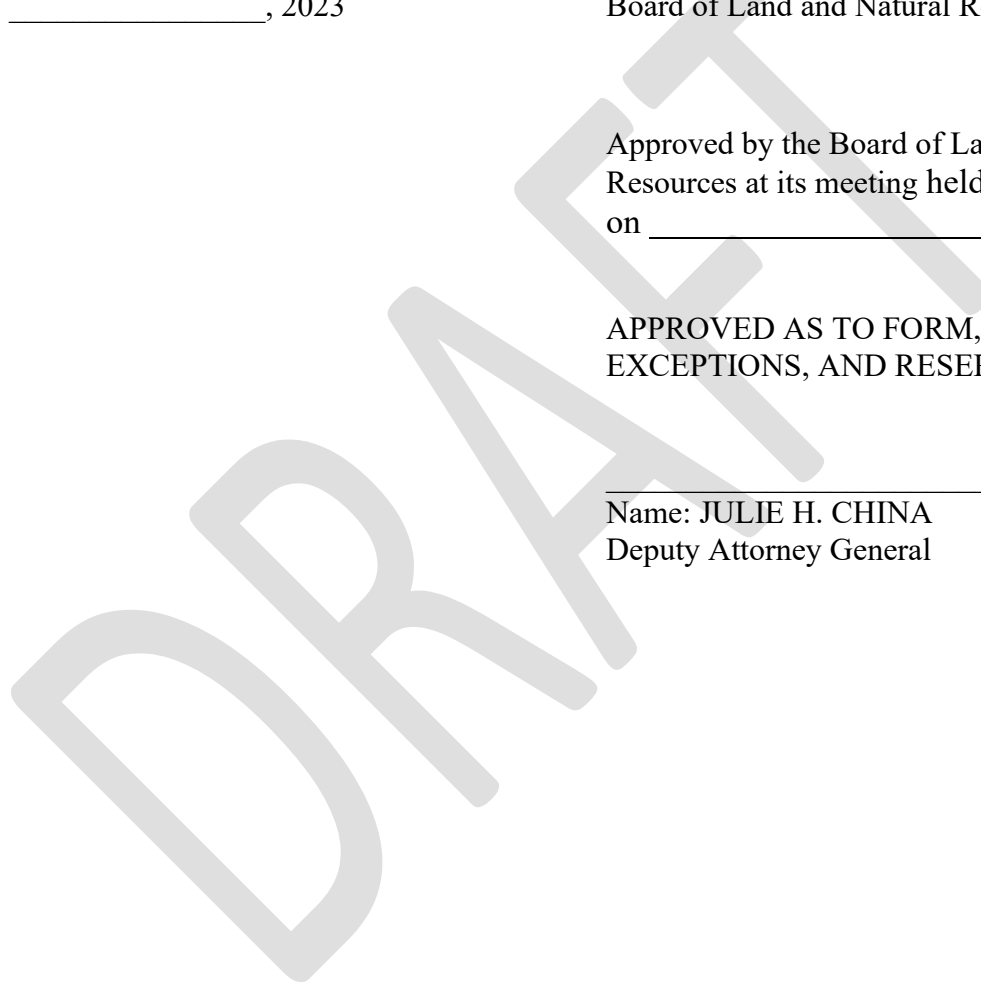
Date: _____, 2023

Name: DAWN CHANG
Chairperson,
Board of Land and Natural Resources

Approved by the Board of Land and Natural Resources at its meeting held on _____, 2023.

APPROVED AS TO FORM, LEGALITY, EXCEPTIONS, AND RESERVATIONS:

Name: JULIE H. CHINA
Deputy Attorney General



STATE OF HAWAI'I)
) SS.
 COUNTY OF HAWAI'I)

On this ____ day of _____, 20____, before me personally appeared _____, to me personally known, who, being by me duly sworn or affirmed, did say that such person(s) executed the foregoing instrument as the free act and deed of such person(s), and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

 Notary Public, State of Hawai'i
 Printed Name: _____
 My Commission Expires: _____

<u>NOTARY CERTIFICATION STATEMENT</u>	
Document Identification or Description:	_____
Document Date:	_____
No. of Pages:	_____
Jurisdiction (in which notarial act is performed):	_____
Signature of Notary	Date of Notarization and Certification Statement
Printed Name of Notary	(Notary Stamp or Seal)

Exhibit A

Property Information Provided to State

Geology and Surface Mining Evaluation Report – April 25, 2019

Haloa Aina Forest Inventory – January 14, 2021

Forest Stewardship Management Plan – recommended for approval by the State Forest Stewardship Advisory Committee on March 11, 2021, with final approval by State Forester August 6, 2021.

Environmental Site Assessment dated August 3, 2021

Conservation Easement Metes/Bounds Description and Survey Map – January 10, 2022

Title Report dated January 05, 2023

Exhibit B

Legal Description

BEING THE PREMISES ACQUIRED BY WARRANTY DEED

GRANTOR: HALOA AINA LLC., a Hawaii limited liability corporation, whose address is P.O. Box 1677, Honokaa, Hawaii 96727

GRANTEE: STATE OF HAWAII, whose address is P.O. Box 621 Honolulu, Hawaii 96809-0621

DATED: _____

RECORDED: _____

CONSERVATION EASEMENT
OVER AND ACROSS LOT 16
HOKUKANO RANCH

Land situated approximately 8 miles Easterly of Mamalahoa Highway and at the Northerly end of Roadway Lot A at Hokukano Tract, North Kona, Island and County of Hawaii, State of Hawaii.

Being a portion of:

Grant 3155 to Henry N. Greenwell.

Beginning at the Southeasterly corner of this parcel of land, being also the Northeasterly corner of Lot 17 of Hokukano Ranch, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU OHAU" being 11,659.11 feet North and 60,248.88 feet East and running by azimuths measured clockwise from True South:

Thence, for the next thirteen (13) courses following along Lot 17 of Hokukano Ranch and along the remainder of Grant 3155 to Henry N. Greenwell:

- 1. 103° 44' 34" 368.79 feet to a spike (set);
- 2. 91° 03' 36" 550.28 feet to a nail (set);
- 3. 91° 27' 34" 586.20 feet to a nail (set);
- 4. 94° 13' 31" 239.83 feet to a spike (set);
- 5. 91° 04' 38" 367.02 feet to a spike (set);

EXHIBIT B - Agreement of Sale

Page 12

- 6. 92° 12' 32" 399.81 feet to a spike (set);
- 7. 89° 33' 1,059.69 feet to a spike (set);
- 8. 84° 25' 894.66 feet to a spike (set);
- 9. 86° 50' 882.96 feet to a spike (set);
- 10. 85° 53' 1,510.19 feet to a spike (set);
- 11. 84° 53' 1,049.54 feet to a nail (set);
- 12. 85° 33' 1,557.35 feet to a spike (found);
- 13. 88° 20' 896.81 feet to a nail (set);
- 14. 88° 20' 61.43 feet along the Northerly end of Roadway Lot A to a nail (set);

Thence, for the next eight (8) courses following along Lot 15 of Hokukano Ranch and along the remainder of Grant 3155 to Henry N. Greenwell:

- 15. 189° 23' 50" 408.94 feet to a nail (found);
- 16. 181° 01' 16" 678.99 feet to a nail (set);
- 17. 206° 21' 38" 720.35 feet to a nail (found);
- 18. 196° 56' 19" 527.62 feet to a nail (found);
- 19. 193° 01' 30" 281.57 feet to a nail (found);
- 20. 191° 59' 28" 1,294.75 feet to a nail (found);
- 21. 179° 47' 17" 551.45 feet to a nail (found);
- 22. 185° 38' 37" 473.03 feet to a spike (set);

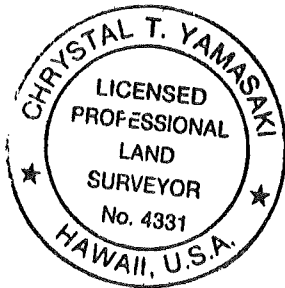
Thence, for the next five (5) courses following along stone wall, along Parcel 03 of TMK: (3) 7-8-001: 003, and along Royal Patent 7844, Land Commission Award 7715, Apana 12 to Lota Kamehameha:

- 23. 309° 41' 47" 1,456.90 feet to a 1 inch pipe in concrete marked "BDRY 4 HKK 1930 FR" (found);
- 24. 247° 35' 06" 2,101.30 feet to a 1 inch pipe in broken concrete marked "BDRY 1930" (found);

EXHIBIT B - Agreement of Sale

Page 13

- 25. 287° 55' 49" 898.20 feet to a 1 inch pipe in concrete marked "FR 2 1930 BDRY HKK" (found);
- 26. 262° 54' 31" 2,255.79 feet to a 1 inch pipe in concrete marked "BDRY 1 HKK 1930" (found);
- 27. 283° 10' 39" 3,995.18 feet to a 1 inch pipe in concrete (found);
- 28. 9° 40' 22" 3,464.50 feet to the point of beginning and containing an area of 944.702 Acres, more or less and EXCLUDING THEREFROM EXCLUSION 1 BEING 2.621 ACRES AND THEREBY LEAVING A NET AREA OF 942.081 ACRES, MORE OR LESS.



WES THOMAS ASSOCIATES

A handwritten signature in cursive script, appearing to read "Chrystal Thomas Yamasaki".

Chrystal Thomas Yamasaki
 Licensed Professional Land Surveyor
 State of Hawaii Certificate No. LS-4331

75-5749 Kalawa Street
 Kailua-Kona, Hawaii 96740-1817
 TMK: 7-9-001: portion 013 (3rd Division)
 January 10, 2022

EXCLUSION 1
FROM CONSERVATION USE
AFFECTING LOT 16 OF HOKUKANO RANCH

Land situated in the Northeasterly corner of Lot 16 of Hokukano Ranch at Hokukano Tract, North Kona, Island and County of Hawaii, State of Hawaii.

Being portions of:

- Lot 16 of Hokukano Ranch; and
- Grant 3155 to Henry N. Greenwell.

Beginning at a 1 inch pipe in concrete (found) at the Northeasterly corner of this exclusion, being also the Northeasterly corner of Lot 16 and being an angle along the Westerly boundary of Royal Patent 7844, Land Commission Award 7715, Apana 12 to Lota Kamehameha, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU OHAU" being 15,074.35 feet North and 60,831.01 feet East and running by azimuths measured clockwise from True South:

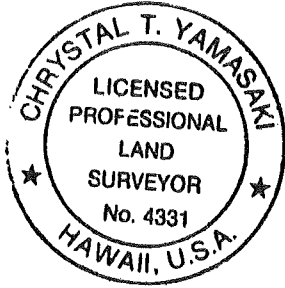
- 1. 9° 40' 22" 251.00 feet along Royal Patent 7844, Land Commission Award 7715, Apana 12 to Lota Kamehameha to a point;

Thence, for the next six (6) courses following along the remainder of Lot 16 of Hokukano Ranch:

- 2. 80° 31' 70.00 feet to a point;
- 3. 111° 25' 162.00 feet to a point;
- 4. 130° 53' 155.00 feet to a point;

EXHIBIT B - Agreement of Sale

- 5. 123° 00' 139.00 feet to a point;
- 6. 143° 43' 66.00 feet to a point;
- 7. 193° 11' 92.19 feet to a point;
- 8. 283° 10' 39" 527.72 feet along Royal Patent 7844, Land Commission Award 7715, Apana 12 to Lota Kamehameha to the point of beginning and containing an area of 2.621 Acres.

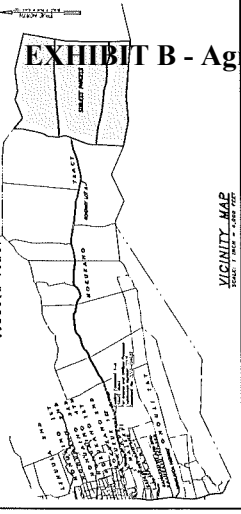


WES THOMAS ASSOCIATES

A handwritten signature in cursive script, appearing to read "Chrystal Thomas Yamasaki".

Chrystal Thomas Yamasaki
 Licensed Professional Land Surveyor
 State of Hawaii Certificate No. LS-4331

75-5749 Kalawa Street, Suite 201
 Kailua-Kona, Hawaii 96740-1817
 TMK: 7-9-001 portion 013 (3rd Division)
 January 10, 2022



EXCLUSION EXHIBIT

MAP SHOWING
LOTS 16, 17 AND 18
OF HOKUKANO RANCH

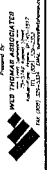
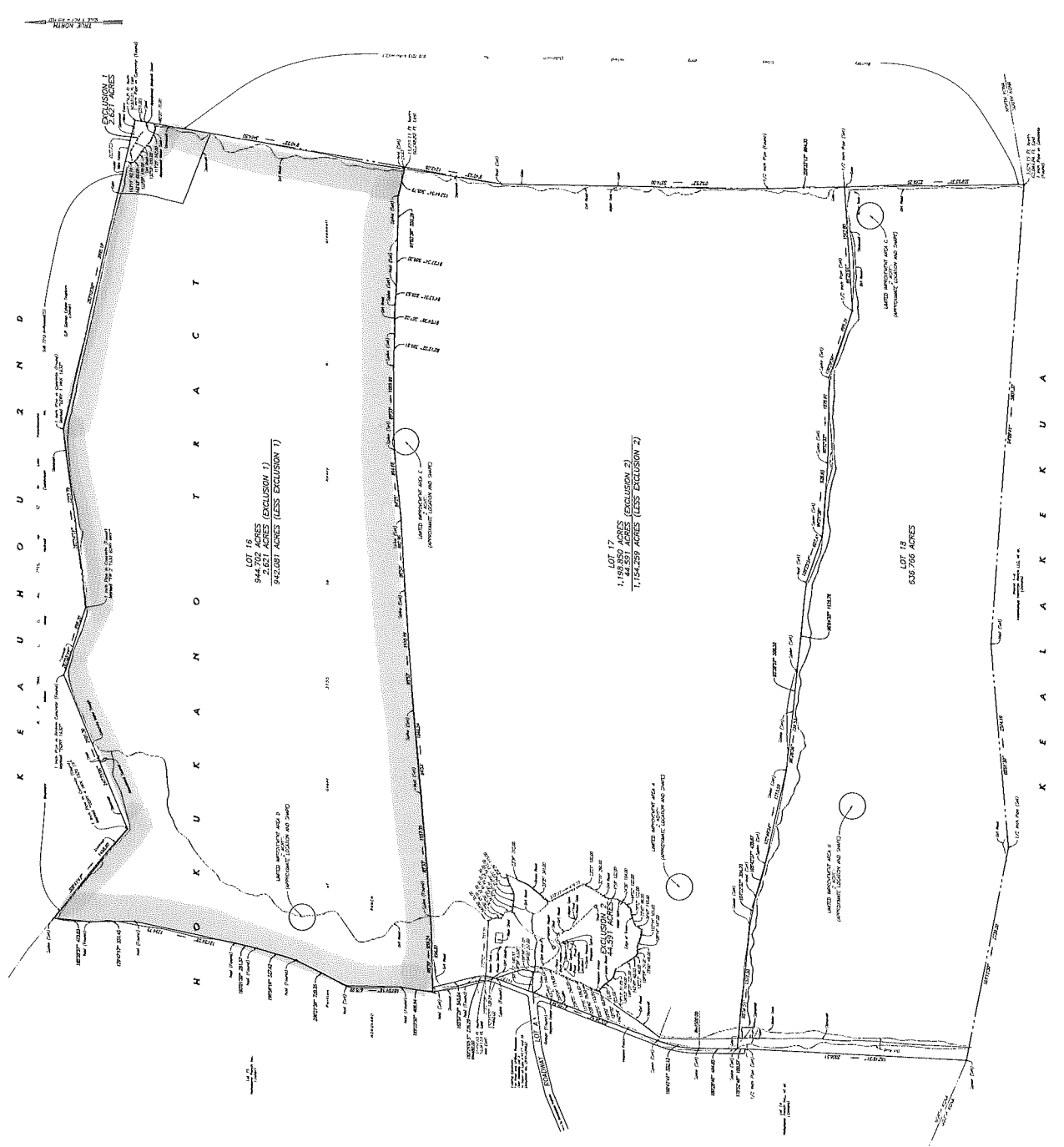
Being Portions of Grant 3155 to Henry N. Greenwell
At HOKUKANO Tract, North Kona
Island and County of Hawaii, State of Hawaii

Prepared for
HENRY N. GREENWELL
1000 KAWAHAU DRIVE
KONA, HAWAII 96701

- NOTES:
1. Contain the description as set forth in Government Grant, Registration 3155.
 2. The boundary between the lots shown on this map and the adjacent lots is shown by a dashed line.
 3. The boundary between the lots shown on this map and the adjacent lots is shown by a dashed line.
 4. The boundary between the lots shown on this map and the adjacent lots is shown by a dashed line.
 5. The boundary between the lots shown on this map and the adjacent lots is shown by a dashed line.



PROJECT NO. 152712
DATE OF SURVEY: JANUARY 11, 2002
BY: [Signature]
FOR: HENRY N. GREENWELL



PROJECT NO. 152712
DATE OF SURVEY: JANUARY 11, 2002
BY: [Signature]
FOR: HENRY N. GREENWELL

CONSERVATION EASEMENT
OVER AND ACROSS LOT 17
HOKUKANO RANCH

Land situated approximately 8 miles Easterly of Mamalahoa Highway and on the Easterly side of Roadway Lot A at Hokukano Tract, North Kona, Island and County of Hawaii, State of Hawaii.

Being a portion of:

Grant 3155 to Henry N. Greenwell.

Beginning at the Northeasterly corner of this parcel of land, being also the Southeasterly corner of Lot 16 of Hokukano Ranch, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU OHAU" being 11,659.11 feet North and 60,248.88 feet East and running by azimuths measured clockwise from True South:

Thence, for the next three (3) courses following along stone wall and along TMK: (3) 7-8-001: 003, being also along Royal Patent 7844, Land Commission Award 7715, Apana 12 to Lota Kamehameha and Keauhou 2nd, the direct azimuths and distances being:

- 1. 9° 40' 23" 1,242.08 feet to a nail (set);
- 2. 0° 52' 52" 3,374.00 feet to a 1/2 inch pipe (found);
- 3. 358° 33' 13" 964.35 feet to a 1/2 pipe (set);

Thence, for the next twelve (12) courses following along Lot 18 of Hokukano Ranch and along the remainder of Grant 3155 to Henry N. Greenwell:

- 4. 86° 25' 01" 1,562.80 feet to a 1/2 inch pipe (set);
- 5. 109° 29' 36" 895.31 feet to a spike (set);
- 6. 90° 52' 33" 1,076.81 feet to a spike (set);

EXHIBIT B - Agreement of Sale

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- 7. 94° 21' 36" 928.83 feet to a spike (set);
- 8. 109° 25' 34" 607.41 feet to a nail (set);
- 9. 96° 04' 35" 1,126.76 feet to a spike (set);
- 10. 95° 38' 59" 508.50 feet to a spike (set);
- 11. 96° 26' 36" 739.53 feet to a spike (set);
- 12. 102° 49' 34" 1,213.59 feet to a spike (set);
- 13. 105° 42' 37" 438.67 feet to a nail (set);
- 14. 101° 22' 32" 354.70 feet to a spike (set);
- 15. 95° 56' 51" 1,579.30 feet to a spike (set);

Thence, for the next five (5) courses following along the Easterly side of Roadway Lot A:

- 16. 180° 28' 40" 484.85 feet to a spike (set);

Thence, following on a curve to the right with a radius of 1,500.00 feet, the chord azimuth and distance being:

- 17. 190° 41' 41" 532.13 feet to a spike (set);
- 18. 200° 54' 42" 2,189.34 feet to a spike (found);

Thence, following on a curve to the left with a radius of 460.00 feet, the chord azimuth and distance being:

- 19. 183° 26' 05.5" 276.29 feet to a point;
- 20. 165° 57' 29" 545.04 feet to a nail (set);

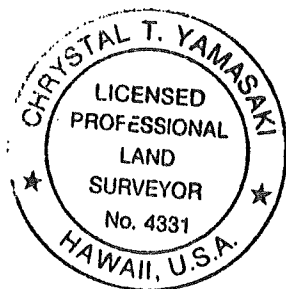
Thence, for the next thirteen (13) courses following along Lot 16 of Hokukano Ranch and along the remainder of Grant 3155 to Henry N. Greenwell:

- 21. 268° 20' 896.81 feet to a spike (found);
- 22. 265° 33' 1,557.35 feet to a nail (set);
- 23. 264° 53' 1,049.54 feet to a spike (set);
- 24. 265° 53' 1,510.19 feet to a spike (set);
- 25. 266° 50' 882.96 feet to a spike (set);
- 26. 264° 25' 894.66 feet to a spike (set);

EXHIBIT B - Agreement of Sale

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- 27. 269° 33' 1,059.69 feet to a spike (set);
- 28. 272° 12' 32" 399.81 feet to a spike (set);
- 29. 271° 04' 38" 367.02 feet to a spike (set);
- 30. 274° 13' 31" 239.83 feet to a nail (set);
- 31. 271° 27' 34" 586.20 feet to a nail (set);
- 32. 271° 03' 36" 550.28 feet to a spike (set);
- 33. 283° 44' 34" 368.79 feet to the point of beginning and containing an area of 1,198.850 Acres, more or less and EXCLUDING THEREFROM EXCLUSION 2 BEING 44.591 ACRES AND THEREBY LEAVING A NET AREA OF 1,154.259 ACRES, MORE OR LESS.



WES THOMAS ASSOCIATES

A handwritten signature in cursive script that reads "Chrystal Thomas Yamasaki".

Chrystal Thomas Yamasaki
 Licensed Professional Land Surveyor
 State of Hawaii Certificate No. LS-4331

75-5749 Kalawa Street
 Kailua-Kona, Hawaii 96740-1817
 TMK: 7-9-001: portion 014 (3rd Division)
 January 10, 2022

EXCLUSION 2
FROM CONSERVATION USE
AFFECTING LOT 17 OF HOKUKANO RANCH

Land situated on the Easterly side of Roadway Lot A and in the Westerly portion of Lot 17 of Hokukano Ranch at Hokukano Tract, North Kona, Island and County of Hawaii, State of Hawaii.

Being portions of:

- Lot 17 of Hokukano Ranch; and
- Grant 3155 to Henry N. Greenwell.

Beginning at a nail (set) at the Northwesterly corner of this exclusion, being also a point on the Westerly boundary of Lot 17 and a point on the Easterly side of Roadway Lot A, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU OHAU" being 10,650.63 feet North and 50,061.53 feet East and running by azimuths measured clockwise from True South:

Thence, for the next forty-three (43) courses following along the remainder of Lot 17:

- | | | |
|----|----------|-------------------------|
| 1. | 272° 52' | 703.00 feet to a point; |
| 2. | 340° 00' | 96.00 feet to a point; |
| 3. | 3° 00' | 68.00 feet to a point; |
| 4. | 306° 00' | 92.00 feet to a point; |
| 5. | 347° 00' | 91.00 feet to a point; |
| 6. | 280° 00' | 89.00 feet to a point; |
| 7. | 275° 26' | 102.00 feet to a point; |

EXHIBIT B - Agreement of Sale

Page 21

8.	257° 00'	59.00	feet to a point;
9.	242° 21'	113.00	feet to a point;
10.	252° 34'	115.00	feet to a point;
11.	23° 36'	312.00	feet to a point;
12.	39° 35'	341.00	feet to a point;
13.	332° 00'	479.00	feet to a point;
14.	23° 21'	100.00	feet to a point;
15.	32° 16'	260.00	feet to a point;
16.	6° 59'	132.00	feet to a point;
17.	24° 36'	104.00	feet to a point;
18.	44° 52'	102.00	feet to a point;
19.	79° 12'	122.00	feet to a point;
20.	70° 45'	86.00	feet to a point;
21.	34° 47'	118.00	feet to a point;
22.	102° 16'	101.00	feet to a point;
23.	108° 14'	147.00	feet to a point;
24.	73° 00'	48.00	feet to a point;
25.	108° 19'	29.00	feet to a point;
26.	135° 27'	46.00	feet to a point;
27.	143° 48'	60.00	feet to a point;
28.	149° 20'	225.00	feet to a point;
29.	104° 53'	104.00	feet to a point;
30.	128° 13'	51.00	feet to a point;
31.	142° 54'	125.00	feet to a point;
32.	131° 00'	73.00	feet to a point;

EXHIBIT B - Agreement of Sale

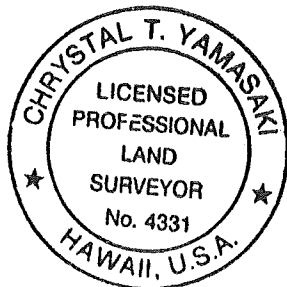
- 33. 192° 00' 68.00 feet to a point;
- 34. 202° 55' 113.00 feet to a point;
- 35. 209° 40' 78.00 feet to a point;
- 36. 197° 16' 104.00 feet to a point;
- 37. 204° 55' 260.00 feet to a point;
- 38. 200° 24' 119.00 feet to a point;
- 39. 192° 51' 140.00 feet to a point;
- 40. 94° 05' 57.00 feet to a point;
- 41. 106° 39' 55.00 feet to a point;
- 42. 98° 38' 83.00 feet to a point;
- 43. 88° 30' 145.81 feet to a point;
- 44. 200° 54' 42" 493.23 feet along the Easterly side of Roadway Lot A to a spike (found);

Thence, following along the Easterly side of Roadway Lot A on a curve to the left with a radius of 460.00 feet, the chord azimuth and distance being:

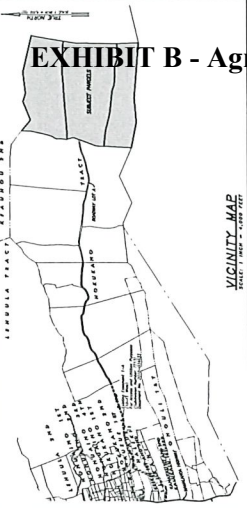
- 45. 192° 11' 05" 139.59 feet to the point of beginning and containing an area of 44.591 Acres.

WES THOMAS ASSOCIATES

Chrystal Thomas Yamasaki
Licensed Professional Land Surveyor
State of Hawaii Certificate No. LS-4331



75-5749 Kalawa Street, Suite 201
Kailua-Kona, Hawaii 96740-1817
TMK: 7-9-001 portion 014 (3rd Division)
January 10, 2022



EXCLUSION EXHIBIT

MAP SHOWING
LOTS 16, 17 AND 18
OF HOKUKANO RANCH

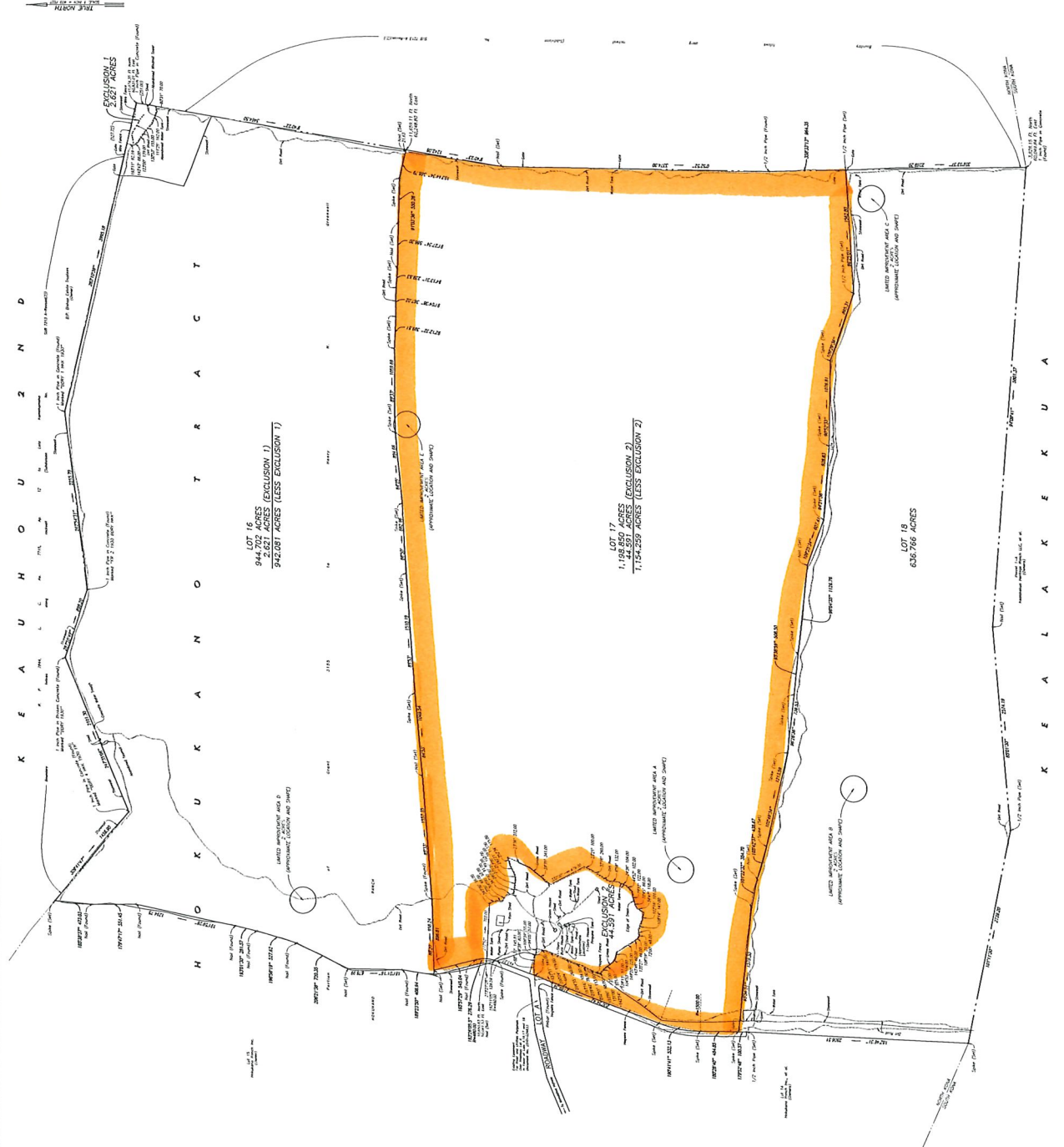
Being Portions of Grant 3155 to Henry N. Greenwell
At HOKUKANO Tract, North Kona
Island and County of Hawaii, State of Hawaii

Prepared For:
JAMES LLC (BENEFIT)
1111 KALANANAKU BLVD, SUITE 100
HONOLULU, HAWAII 96813

- NOTES:
1. Station "0+00" (marked) are referred to as "Stationed Center Line" (marked).
 2. The boundary lines shown on this map are based on the survey data provided to the Surveyor.
 3. The boundary lines shown on this map are based on the survey data provided to the Surveyor.
 4. The boundary lines shown on this map are based on the survey data provided to the Surveyor.
 5. The boundary lines shown on this map are based on the survey data provided to the Surveyor.



PROJECT NO.: 11111
DATE: JANUARY 11, 2022
FILE NO.: 11111
JOB NO.: 11111



James Thomas Associates, Inc.
Professional Surveyors
1111 KALANANAKU BLVD, SUITE 100
HONOLULU, HAWAII 96813
PH: 808-955-1111
FAX: 808-955-1112
WWW.JTASURVEYORS.COM

CONSERVATION EASEMENT
OVER AND ACROSS LOT 18
HOKUKANO RANCH

Land situated approximately 8 miles Easterly of Mamalahoa Highway and on the Easterly side of Roadway Lot A (60-Ft. Wide) at Hokukano Tract, North Kona, Island and County of Hawaii, State of Hawaii.

Being a portion of:

Grant 3155 to Henry N. Greenwell.

Beginning at a 1 inch pipe in concrete (found) at the Southeasterly corner of this parcel of land, being also a point on the Northerly boundary of Lot 1-A and the Southwesterly corner of Royal Patent 7844, Land Commission Award 7715, Apana 12 to Lota Kamehameha, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU OHAU" being 3,828.15 feet North and 60,049.84 feet East and running by azimuths measured clockwise from True South:

Thence, for the next three (3) courses following along Lot 1-A and along Royal Patent 7533 and 3607, Land Commission Award 8452, Apana 9 to A. Keohokalole:

- 1. 94° 09' 41" 5,801.37 feet to a nail (set);
- 2. 85° 01' 30" 2,574.19 feet to a 1/2 inch pipe (set);
- 3. 101° 11' 30" 2,739.20 feet to a spike (set);

Thence, for the next fourteen (14) courses following along the remainder of Grant 3155 to Henry N. Greenwell:

- 4. 182° 46' 31" 2,806.51 feet along Lot 14 of Hokukano Ranch to a 1/2 inch pipe (set);
- 5. 179° 52' 48" 100.57 feet along Lot 14 of Hokukano Ranch to a spike (set);

EXHIBIT B - Agreement of Sale**Page 25**

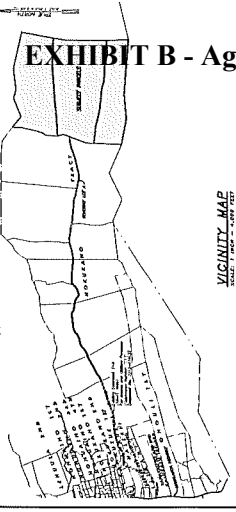
Thence, for the next twelve (12) courses following along Lot 17 of Hokukano Ranch:

- | | | | | | |
|-----|------|-----|-----|----------|--|
| 6. | 275° | 56' | 51" | 1,579.30 | feet to a spike (set); |
| 7. | 281° | 22' | 32" | 354.70 | feet to a nail (set); |
| 8. | 285° | 42' | 37" | 438.67 | feet to a spike (set); |
| 9. | 282° | 49' | 34" | 1,213.59 | feet to a spike (set); |
| 10. | 276° | 26' | 36" | 739.53 | feet to a spike (set); |
| 11. | 275° | 38' | 59" | 508.50 | feet to a spike (set); |
| 12. | 276° | 04' | 35" | 1,126.76 | feet to a nail (set); |
| 13. | 289° | 25' | 34" | 607.41 | feet to a spike (set); |
| 14. | 274° | 21' | 36" | 928.83 | feet to a spike (set); |
| 15. | 270° | 52' | 33" | 1,076.81 | feet to a spike (set); |
| 16. | 289° | 29' | 36" | 895.31 | feet to a 1/2 inch pipe (set); |
| 17. | 266° | 25' | 01" | 1,562.80 | feet to a 1/2 inch pipe (set) in wall; |
| 18. | 359° | 03' | 37" | 2,269.20 | feet along rock wall and along Royal Patent 7844, Land Commission Award 7715, Apana 12 to Lota Kamehameha to the point of beginning and containing an area of 636.766 Acres. |

WES THOMAS ASSOCIATES

Chrystal Thomas Yamasaki
 Licensed Professional Land Surveyor
 State of Hawaii Certificate No. LS-4331

75-5749 Kalawa Street
 Kailua-Kona, Hawaii 96740-1817
 TMK: 7-9-001: 015 (3rd Division)
 August 31, 2011 (Updated for Conservation Easement: January 10, 2022)



VICINITY MAP
SCALE: 1" = 100'

EXCLUSION EXHIBIT

MAP SHOWING
LOTS 16, 17 AND 18
OF HOKUKANO RANCH

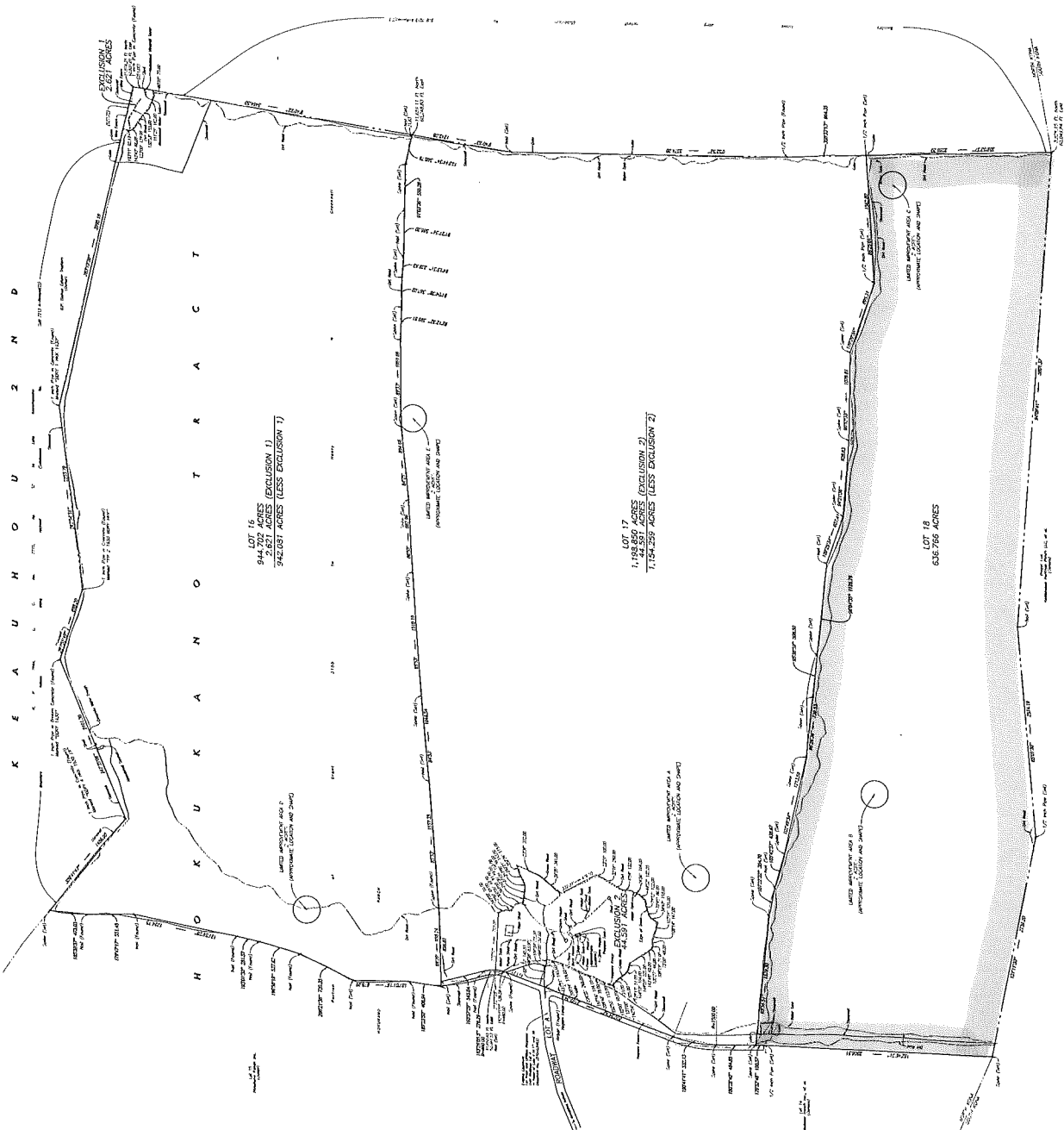
Being Portions of Grant 3155 to Henry N. Greenwell
At HOKUKANO Tract, North Kona
Island and County of Hawaii, State of Hawaii

Prepared for
HENRY N. GREENWELL
HAWAII, TERRITORY, 1927

- NOTES:
1. Section 16 and 17 are shown in Government Survey Representation.
 2. Section 18 is shown in Government Survey Representation.
 3. The boundary between the two sections is shown in the map.
 4. The boundary between the two sections is shown in the map.
 5. The boundary between the two sections is shown in the map.
 6. The boundary between the two sections is shown in the map.
 7. The boundary between the two sections is shown in the map.
 8. The boundary between the two sections is shown in the map.
 9. The boundary between the two sections is shown in the map.
 10. The boundary between the two sections is shown in the map.



PROJECT NO. 11, 1927
 HAWAIIAN ISLANDS
 HOKUKANO TRACT, NORTH KONA
 ISLAND AND COUNTY OF HAWAII, STATE OF HAWAII



PROJECT NO. 11, 1927
 HAWAIIAN ISLANDS
 HOKUKANO TRACT, NORTH KONA
 ISLAND AND COUNTY OF HAWAII, STATE OF HAWAII

Exhibit C: Map of Property

Exhibit D: Deed of Conservation Easement and Restriction of Development Rights

DRAFT

LAND COURT

REGULAR SYSTEM

AFTER RECORDATION, RETURN BY: MAIL () P

TITLE OF DOCUMENT:

**DEED OF CONSERVATION EASEMENT AND
RESTRICTION OF DEVELOPMENT RIGHTS**

PARTIES TO DOCUMENT:

Owner:	Haloa Aina L.L.C., a Hawai'i limited liability company, P.O. Box 1677 Honokaa, Hawai'i 96727
Primary Co-Holder:	The State of Hawai'i, through its Board of Land and Natural Resources, Kalanimoku Building, 1151 Punchbowl Street, Honolulu, Hawai'i 96813
Secondary Co-Holder:	County of Hawai'i, a municipal governmental corporation of the State of Hawaii, 25 Aupuni Street, Hilo, Hawai'i 96720

TAX MAP KEY(S): (3) 7-9-001:013, 014; 015

(This document consists of _____ pages.)

**DEED OF CONSERVATION EASEMENT AND
RESTRICTION OF DEVELOPMENT RIGHTS**

THIS DEED OF CONSERVATION EASEMENT AND RESTRICTION OF DEVELOPMENT RIGHTS (“Easement”) is made this ___ day of _____, 20___, by Haloa Aina L.L.C., a Hawai’i limited liability company, having the physical and mailing address of 45-574 Plumeria St, P.O. Box 1677, Honokaa, Hawai’i 96727 (“Owner”), the STATE OF HAWAI’I, by its BOARD OF LAND AND NATURAL RESOURCES, whose principal place of business is the Kalanimoku Building, 1151 Punchbowl Street, Honolulu, Hawai’i 96813 (“Primary Co-Holder”), and COUNTY OF HAWAI’I, a municipal governmental corporation of the State of Hawai’i whose principal place of business is 25 Aupuni Street, Hilo, Hawai’i 96720 (“Secondary Co-Holder”) (each, a “Party”, and together the “Parties”).

RECITALS

I. Structure of this Easement and Initial Definitions

A. Owner is the sole owner in fee simple of that certain real property situated at Kealakekua, District of South Kona, County of Hawai’i, State of Hawai’i, consisting of three (3) contiguous parcels totaling 2,780 acres, more or less, and bearing tax map key (“TMK”) numbers: (3) 7-9-001:013, 014; and 015 (the “Land”). This Easement encumbers a portion of the Land containing approximately 2,733.106, more or less acres, as described in **Exhibit A** (the “Protected Property”) and depicted on a map in **Exhibit B**.

B. Co-Holders desire to obtain from Owner, and Owner desires to grant to Co-Holders, a conservation easement over the Protected Property and subject to the terms and conditions of this Easement.

C. This Easement includes three main parts: (1) the Recitals, which provide a general description of the Protected Property, its important Conservation Values, and the existing zoning and land use classification affecting the Protected Property; (2) Covenants and Restrictions, which describe the respective rights and obligations of Owner and Co-Holders; and (3) the Exhibits, which identify and describe the Protected Property.

D. Other capitalized terms used in this Easement are either defined when they first appear in this Easement or may be found in the Glossary, located in Section XI of the Covenants and Restrictions.

II. Identification of the Protected Property

A. The Protected Property Location and Description. The Protected Property is located on the western slope of Mauna Loa in the South Kona District, County of Hawai’i and being a portion of TMKs (3) 7-9-001:013, 014; and 015. The Protected Property constitutes the mauka portion of the Kaumo’o ahupua’a beginning at approximately the 4,500 foot elevation to approximately the 5,500 foot elevation. The terrain is undulating and contains dry montane forest.

The following land use designations relate to the Protected Property:

1. *State Land Use District Boundary.* The Protected Property is classified as “Agriculture,” as defined by Hawai‘i Revised Statutes (HRS) Chapter 205. Use of the Protected Property is limited as set forth in HRS Chapter 205.

2. *County Zoning.* The Protected Property is zoned “Agriculture (Ag-20),” as defined by Chapter 25-5-70 of the Hawai‘i County Code, and is limited to the uses prescribed therein.

B. Importance of Protected Property for Conservation Values. The Protected Property possesses important native forest watershed and ecosystems, forest resources and products including, but not limited to, commercial forest product values and pharmacopeia, as well as open space, recreational, and research/educational values (collectively, the “Conservation Values”). These specific Conservation Values are of interest for protection through this Easement:

1. *Forest Watershed, Wildlife and Ecosystems.* The Protected Property contains ecologically significant native forest ecosystem values including, but not limited to, watershed health, rare and significant natural resources, and forest health protection. The Protected Property contains and contributes to Hawaii’s overall biodiversity including threatened and endangered plants and native animal species. The Protected Property contributes to the overall watershed health of Kaumo‘o ahupua‘a/watershed and larger Kona region through contribution to groundwater and aquifers recharge that supply the island with fresh water, capture cloud drip and condensation by vegetative cover, more specifically canopy trees and shrubs, and reduction of soil loss due to erosion.

2. *Forest Resources and Products.* The Protected Property is comprised of a significant amount of native forest resources and products including, but not limited to carbon (woody biomass, trees, shrubs, grass, and soil carbon), timber resources (living, dead, and dying trees), cultural gathering material, pharmacopeia, as well as other forest products such as sandalwood oil and other related products. The Parties agree that commercial and non-commercial vegetative management can promote forest health as well as contribute to the local forestry industry. Preservation of the Protected Property’s native forest resources and products is not only important for the conservation of natural characteristics of the region, but also for the management and the continuous promotion of compatible forestry uses and cultural practices. The preservation of the Protected Property as a working forest enables the Property to continue to provide the public and society with a wide range of goods and services (i.e., high-quality jobs, local/sustainable industry, a diversity of forest based commercial goods, and pharmacopeia).

3. *Open Space.* Preservation of the Protected Property’s conservation and agricultural values including the Protected Property’s forests and timberland resources contribute to the scenic and greenbelt qualities of the larger Kona region. Preservation of these scenic qualities provides a significant public benefit and will preserve the

Protected Property's scenic value and existing natural resources including, but not limited to, native forest ecosystems; native species populations; native trees such as 'ōhi'a (*Metrosideros polymorpha*), koa (*Acacia koa*), māmane (*Sophora chrysophylla*), sandalwood or 'iliahi (*Santalum paniculatum*), and various other mixed forest types; as well as important geological features found on the Protected Property. Removal of large residential and agricultural development rights from the Protected Property preserves the open space values including reducing potential congestion on local roads and highways that would result from large-scale residential development of the Protected Property.

4. *Recreational, Research and Educational Values.* The Protected Property's recreational and research values contribute to the overall access to forest based recreational opportunities in the State and to the availability of locations and land types needed to expand the knowledge base on Hawaiian ecosystems, geologic features, native forests, and restoration practices. The Protected Property's roads and trails, camping areas, archeological and culturally important features, and unique research opportunities, including, but not limited to, human, animal, and ecosystem perspectives, are an important public benefit for the State, Nation and the Protected Property. The Parties recognize that access to the Protected Property for these values is best achieved through facilitated and strictly controlled means, in order to facilitate the protection of the other Conservation Values.

C. Baseline Documentation. The Conservation Values of the Protected Property are further documented in an inventory of relevant features called the "Baseline Documentation" identified in **Exhibit C**. The Baseline Documentation consists of a descriptive report of resources found in the Protected Property, title reports for the subject parcels, maps, photographs, and other documentation, and is maintained by Primary Co-Holder. The Parties agree that the Baseline Documentation provides a comprehensive and accurate representation of the Protected Property and its resources as of the Effective Date. The Baseline Documentation is intended to serve as an objective informational baseline for monitoring compliance with the terms of this Easement.

D. The Forest Legacy Program. The purpose of this Easement is to effect the Forest Legacy Program ("FLP") in accordance with the provisions of the Cooperative Forestry Assistance Act of 1978, Public Law 95-313 as amended (codified at 16 USC § 2101 et seq.), on the Protected Property. The purpose of the FLP is to protect environmentally important forest areas that are threatened by conversion to non-forest uses and, through the use of conservation easements and other mechanisms, promote Forest Land protection and other conservation opportunities, including the protection of important scenic, cultural, fish, wildlife and recreational resources, riparian area, watershed and other ecological values, The purpose of the FLP also includes encouragement of management for and the production of economically sustainable and commercially viable forest products consistent with the other purposes of this Easement.

This project ranked high in the national selection process for the FLP when it was funded by the U.S. Department of Agriculture ("USDA") Forest Service. Given that this Easement and its purpose represent the advancement of the goals, objectives and purposes of the Hawaii FLP, that program has awarded a grant for part of the purchase

price for this Easement through the FLP.

The specific Conservation Values of the Protected Property are consistent with the goals for the FLP. Owner shall manage the Protected Property in a manner that is consistent with the purposes for which the land entered the FLP and is prohibited from converting the Protected Property to other uses. The FLP protects “working forests”, those that protect water quality, provide habitat, forest products, opportunities for recreation, and other public benefits. The Parties agree that the management of the Protected Property for sustainable forest products (including wood products and compatible understory crops) is consistent with the Conservation Values of the Protected Property and sustainable forest production contributes to the management of a healthy watershed.

E. Hawai'i County. Additional funding for this Easement was acquired with moneys from Hawai'i County's Public Access, Open Space, and Natural Resources Preservation Fund. This Easement supports the Public Access, Open Space, and Natural Resources Preservation Program goals including natural resource and watershed protection and forest preservation, in accordance with the Hawai'i County Charter 10-15.(H.C.C. 10-15)

III. Intent to Protect Conservation Values of the Protected Property

A. The Protected Property possesses significant Conservation Values, described in Section I of the Covenants and Restrictions.

B. The land use laws and designations referenced in Section II.A. of Recitals are not sufficiently restrictive to protect the Conservation Values of the Protected Property. They permit subdivision of the Protected Property and construction of residences or other structures. Pursuant to this Easement, subdivision is prohibited, and no permanent residences shall be permitted on the Protected Property, except as specifically provided herein. Conveyance or devise of the Protected Property by individual parcels is prohibited.

C. Owner desires that the Conservation Values of the Protected Property be preserved and maintained in perpetuity by permitting only those uses of the Protected Property that do not impair or interfere with the Conservation Values. And Co-Holders desire to accept this Easement to preserve and protect in perpetuity the Conservation Values of the Protected Property for the benefit of this generation, and the generations to come.

D. Owner intends to convey to Co-Holders an easement interest over the Protected Property to preserve and protect the Conservation Values of the Protected Property in perpetuity, free and clear of all encumbrances except those identified in **Exhibit A** attached hereto.

E. HRS § 198-3 provides that any “public body and any organization which

qualifies for and holds an income tax exemption under section 501(c) of the Federal Internal Revenue Code of 1986 (“Code”), as amended, and whose organizational purposes are designed to facilitate the purposes of HRS Chapter 198, may acquire and hold conservation easements by purchase, agreement, donation, devise, or bequest, but not by eminent domain.” Co-Holders are a public body qualified to hold a conservation easement under HRS § 198-3.

F. In consideration of the foregoing, Co-Holders desire to purchase from Owner, and Owner desires to sell to Co-Holders, an easement over, upon and across the Protected Property to preserve and protect the Conservation Values of the Protected Property, together with a right to enforce this Easement and the covenants and restrictions herein, subject, however, to the terms and conditions herein.

NOW THEREFORE, for good and valuable consideration paid by Co-Holders, the receipt and sufficiency of which is acknowledged by Owner, and the foregoing Recitals and mutual covenants, terms, conditions, and restrictions contained herein, and pursuant to laws of the State of Hawai‘i, including HRS Chapter 198, Owner hereby grants, bargains, sells, and conveys to Co-Holders a conservation easement in perpetuity over the Protected Property subject only to the covenants, conditions, restrictions contained in this Easement and encumbrances identified in **Exhibit A**.

Owner declares that the Protected Property shall be held, mortgaged, encumbered, transferred, sold, conveyed, used, and occupied subject to the covenants, conditions, restrictions, and easements hereinafter set forth, which covenants, conditions, restrictions, and easements shall be deemed to run with the land in perpetuity and to burden the Protected Property in perpetuity.

COVENANTS AND RESTRICTIONS

I. Purpose

The Purpose of this Easement is to preserve and maintain the Conservation Values, as set forth in Section II.B. of Recitals and in Sections I of the Covenants and Restrictions, by preventing any use of the Protected Property that will impair or interfere with the Conservation Values (the “Purpose”).

A. The Conservation Values include, but are not limited to, a healthy, functioning, and relatively native forest watershed and the capacity of the Protected Property to sustainably produce commercial wood products and other agroforestry products consistent with the establishment and maintenance of a productive and healthy forestland provided by, or anticipated to be restored on the Protected Property (the “Primary Purposes”); and, to the extent it is consistent with the accomplishment of the Primary Purposes, the relatively natural habitat, the historically and culturally sensitive features of the Protected Property, and the open space characteristics of the Protected Property. The specific Conservation Values of the Protected Property are consistent with the goals for the FLP. The FLP protects “working forests,” those that protect water quality, provide habitat, forest products, opportunities for recreation, and other public benefits.

The Parties agree that the management of the Protected Property for sustainable forest products, including wood products and compatible understory crops, is consistent with the forest watershed values of the Protected Property and sustainable forest production contributes to the management of a healthy watershed.

B. No activity which is inconsistent with the Purpose of this Easement or shall impair the Conservation Values shall be permitted on the Protected Property.

II. Duties of Owner

It is the duty of the Owner to manage the Protected Property in a manner that is consistent with the purposes for which the land entered the FLP. The Owner shall maintain forest cover of at least 75 percent or reattain forest cover through forest management as described below. It is also a duty of the Owner to regularly update the Forest Stewardship Plan (the "Plan") as described below.

A. Forest Stewardship Plan. This Easement requires a Plan, as may be amended from time to time, to be prepared by Owner and Approved in writing by Primary Co-Holder. Co-Holders acknowledge that the Plan may, at Owner's discretion, provide for commercial forest management and agree that commercial management when conducted sustainably and pursuant to the terms of the approved Plan furthers the Purpose of this Easement.

1. The Plan shall be consistent with the provisions of subsection 5(f) of the Cooperative Forestry Assistance Act of 1978, as amended, 16 USC § 2103a(f), and shall be subject to revision in order to incorporate forest management practices that are prescribed under federal or state law. Compliance with the elements of an approved Plan is a requirement of this Easement. The Plan will include the criteria, elements, and information to meet content requirements of the current USDA Forest Service, Forest Stewardship Program's National Standards and Guidelines and the Forest Stewardship Program plan requirements of the State, as provided by Primary Co-Holder. The Plan shall include at least the following elements: (1) forest management objectives; (2) an appropriately scaled map indicating such items as forest stands, major access routes and temporary structures used for forest products harvest; (3) forest stand descriptions, expected stocking levels before and after harvesting, soils, topography, stand quality, insect and disease occurrence, management history, and prescribed silvicultural treatment; (4) strategy and timeline for management practice implementation; (5) considerations related to plants and wildlife, including native bird species and the native Hawaiian hoary bat or 'ōpe'ape'a, (6) plans for recreation and public access; and (7) historic and cultural resources considerations.

2. The Plan shall contain a description of each forest stand or forest type with relatively uniform and similar forest conditions. Forest stand and associated forest type maps and descriptions shall be provided at a level of detail necessary to support professional forest planning and forest product "Harvest" operations pursuant to this Easement and shall include, at a minimum, merchantable species descriptions for timber and non-timber forest products, tree stocking numbers and stand volume of

merchantable species (i.e. stand tables), and plans for “Forest Stand Improvement”. Additionally, the Plan shall specify expected silvicultural prescriptions and schedules for Harvest of merchantable species, including Harvest integral to Forest Stand Improvement (explained in III.B.4 below). The Plan shall ensure that no less than seventy-five (75) percent of the Protected Property remains in Forest Cover, as required by the FLP, and furthermore shall set goals and objectives to achieve a minimum of 2224 acres total forest cover.

3. Owner shall be required to update the Plan every ten (10) years or when the Protected Property, in whole or in part, changes hands, unless the new owner agrees in writing to continue management according to the existing plan. Any update, amendment or material modification of the Plan requires Primary Co-Holder’s Approval in accordance with Section VII, below.

4. In the event of any inconsistency or conflict between the provisions of this Easement and the Plan, the terms of this Easement shall prevail.

III. Rights of Owner

Except as prohibited or restricted by the provisions in Sections III and IV of the Covenants and Restrictions, Owner reserves all customary rights and privileges of ownership so long as they are not expressly prohibited by this Easement, are not inconsistent with the Purpose of this Easement, and do not impair the Conservation Values. Owner expressly and specifically reserves the following rights:

A. Forest Management. Forest management, including, but not limited to, removal of non-native species and game and feral animals, reforestation of the watershed, planting of native species, and collecting or harvesting of forest products for commercial purposes is permitted on the Protected Property in accordance with applicable federal, state, and county laws and regulations.

B. Harvesting and Processing of Forest Products

1. Harvest is limited to no more than twenty-five (25) percent of the total volume of all merchantable species in any one ten (10) year period, unless Owner or Primary Co-Holder can demonstrate that the actual merchantable volume accumulation on the Protected Property justifies a higher allowable Harvest. Allowable Harvest over a ten (10) year period will be determined using the then-current Inventory of the Protected Property and described in the approved Plan. The Inventory shall have a standard error of twenty-five (25) percent at a seventy-five (75) percent level of confidence or greater unless otherwise Approved in writing by Primary Co-Holder. Such Approval of alternative standards may be provided in advance or after review of draft inventory results, but always before finalization of the Inventory. Owner shall conduct an Inventory of the Protected Property every ten (10) years if harvesting forest products is occurring or planned during the Plan period.

2. Any anticipated Harvest shall be subject to the following requirements and restrictions:

(a) Prior to every Harvest following the Effective Date, Owner shall determine the volume to be harvested, within the locations, limits and prescriptions as described in the Plan. Trees designated for Harvest shall be physically marked for the purposes of harvesting and monitoring. Marking may be done by the owner or owner's designee, but in either case shall be a person with the skills and knowledge to select and mark trees according to the Plan prescriptions.

(b) As an alternative to physical marking, the Plan or another written agreement between the Owner and the Primary Co-Holder may provide another method or technology to guide Harvest according to the Plan prescriptions and to enable the Primary Co-Holder to monitor compliance with the Plan and terms of the Easement.

(c) After designation of trees for Harvest as described above (III.B.2.a and b), the Owner may proceed with Harvest.

(d) Owner shall provide Co-Holders with information on all Harvests including location, merchantable species harvested, and volume harvested upon request or on an annual basis for monitoring, as required by Primary Co-Holder.

3. Harvest of below ground heartwood root balls of sandalwood is permitted on the Protected Property if soil disturbance is done in an environmentally compatible manner and the removal techniques and subsequent forest silviculture are described in the Plan.

4. Forest Stand Improvement, is permitted on the Protected Property to improve the vigor, stocking, composition, productivity, and quality of forest stands as described in the Plan. Harvest associated with Forest Stand Improvement shall proceed as described above (III.B.2.). Harvest may exceed twenty-five (25%) percent if Owner demonstrates there is a management need for such Harvest and there is sufficient stocking, planting or regeneration of forest stands. Such management need and Forest Stand Improvement prescriptions shall be described in the Plan along with total Harvest limitations, whether 25%, less or greater.

5. In the event of wildfire, windstorm, disease, insect infestation, or other natural catastrophe on all or portions of the Protected Property, Owner may exceed the harvest levels set forth in the Plan with the prior Approval of Primary Co-Holder, provided that such salvage harvest is consistent with the purposes and terms of this Easement. Such prior Approval may be predicated upon a determination of whether and when a Plan update will be required to revise post-salvage harvest levels and reforestation plans. After a forest products Harvest predicated on natural catastrophe (salvage harvest), Owner shall reforest with native species as necessary to re-establish a relatively natural native forest composition and the seventy-five (75) percent forested

cover required by the FLP, within ten (10) years if silviculturally possible. If not silviculturally possible within ten (10) years, the next Plan update shall provide for achievement of 2224 acres forest cover over a longer time period.

6. Owner is permitted to process forest products harvested on the Protected Property, provided that all structures used for processing shall comply with Section III.G. below, the processing of forest products does not impair the Protected Property's Conservation Values, and the processing of forest products complies with the Laws.

C. Agriculture. Owner is permitted to engage in agricultural activities that comply with the Laws including, but not limited to, the raising and managing of livestock and the collection of understory plants or plant products, provided that such activities are compatible with sustaining the Protected Property's Forest Cover and Conservation Values. Furthermore, agroforestry and silvopasture use guided by the Plan to increase or sustain tree canopy cover is allowed, and shall be considered Forest Cover where it has a forest tree canopy density of more than ten (10) percent. Notwithstanding the foregoing, under no circumstances shall there be permitted any activity that imports raw material(s) (commodities or livestock not produced as a result of the Harvest of forage or agricultural crops on the Protected Property) onto the Protected Property for the purpose of fattening livestock for commercial slaughter (i.e., a feed lot). Areas throughout the Protected Property undergoing native forest management or reforestation, as detailed in the Plan, shall exclude managed livestock through the use of livestock proof fencing, until such time the planted vegetation is not susceptible to grazing pressure. Agricultural activities are permitted on the Protected Property only as set forth in both this Section III.C. and as detailed in the Plan.

D. Hunting. Owner may use the Protected Property for hunting game and feral animals for management purposes. Owner shall not intentionally increase the game animal population. Game animal management shall be described in the Plan.

E. Public and Private Access. This Easement allows Owner to authorize public and private access to any part of the Protected Property for permitted uses, on such terms and conditions consistent with the Purpose of this Easement. Owner covenants and agrees that Owner shall at all times comply with any and all governmental regulation of the Protected Property regarding access of disabled persons, including without limitation the Americans with Disabilities Act of 1990, 42 U.S.C. Sec. 12101 *et. seq.*, or any other applicable federal, state or local laws or ordinances and the regulations promulgated thereunder.

Owner authorizes an authorized representative of Secondary Co-Holder to manage public access to the Protected Property at least four (4) times per year, quarterly, for education and other public purposes. Public access is described in the Plan. All public access by an authorized representative of Secondary Co-Holder shall be conducted pursuant to an agreement binding said authorized representative to comply with law, obtain liability insurance in amounts reasonably required by Primary Co-Holder, and to

indemnify Primary Co-Holder and Owner against any and all claims arising from such public access.

F. Commercial Recreational Uses. This Easement allows Owner to authorize the following commercial recreational uses:

1. Low impact, passive recreational uses including horseback riding (including horse drawn wagons or carts), bird watching, hiking, camping, photography, mountain biking, picnicking, and hunting, within the Protected Property.

2. Motorized vehicle (including ATV, UTV,) tours within the Protected Property:

(a) Owner shall ensure that vehicles stay on existing roads, trails or paths at all times as documented in the Baseline Documentation or described in the Plan;

(b) Owner has provided Co-Holders a fire prevention and response plan for the tours. Owner shall ensure that all vehicles are equipped with appropriate fire preventative measures, such as spark arresters, to prevent fire ignitions, and operation mufflers to reduce noise disturbance;

(c) Owner shall ensure that all participants maintain control of the vehicles at all times to prevent crashes, fires and off-road damage; and

(d) All tours are accompanied by a guide to ensure that participants follow the stated terms and conditions and that the participants act safely at all times.

3. Commercial recreational uses identified in this Section III.F. are permitted only as set forth in the Plan and must be consistent with the Purpose of this Easement. The Plan shall include a detailed description of the number of participants, tours, and vehicles involved in commercial recreational uses in this Easement.

4. In the event that Owner contemplates a commercial recreational use, other than those specifically permitted in this Section III.F. Consultation with and Approval from Primary Co-Holder is required. Other commercial recreational uses shall be subject to this Section III.F. and such additional terms and conditions established by Primary Co-Holder that are intended to limit the extent and intensity of the use, in a manner consistent with the Purpose and the Conservation Values of this Easement.

5. Owner shall include, and list Co-Holders as covered on any participant waiver form.

6. In addition to the general indemnifications set forth in Section VIII.E. below, all commercial recreational uses shall require Owner to indemnify, defend, and hold harmless Co-Holders from and against any claim or demand for loss, liability, or

damage, including claims for bodily injury, wrongful death, or property damage, arising out of or resulting from: (1) any act or omission on the part of Owner relating to its use, occupancy, maintenance, or enjoyment of the Protected Property; (2) any failure on the part of Owner to maintain the Protected Property and roadways adjacent thereto in Owner's use and control, and including any accident, fire or nuisance, growing out of or caused by any failure on the part of Owner to maintain the premises in a safe condition; and (3) from and against all actions, suits, damages, and claims by whomsoever brought or made by reason of Owner's non-observance or non-performance of any of the terms, covenants, and conditions of this Section III.F., this Easement, or the Laws.

7. All commercial recreational uses shall require Owner to procure and maintain, at its cost and expense and acceptable to the Co-Holders, in full force and effect throughout the term of any commercial use of the Protected Property, comprehensive general liability insurance, or its equivalent, with an insurance company or companies licensed or authorized to do business in the State of Hawai'i with an AM Best rating of not less than "A- VIII" or other comparable and equivalent industry rating, with coverage terms acceptable to Co-Holders. The policy or policies of insurance shall name Co-Holders as an additional insured. A copy of the policy or other documentation required by Co-Holders shall be filed with Co-Holders. The insurance shall cover the entire Protected Property, including all buildings, improvements, and grounds and all roadways or sidewalks on or adjacent to the premises in the use or control of Owner.

Owner shall, at least fifteen (15) days prior to the commencement of any commercial use of the Protected Property, furnish Co-Holders with a policy(s) or other documentation required by Co-Holders showing the policy(s) to be initially in force, keep the policy(s) or other documentation required by the Co-Holders on deposit during the entire period of commercial use, and furnish a like policy(s) or other documentation required by Co-Holders upon each renewal of the policy(s). This insurance shall not be cancelled, limited in scope of coverage or nonrenewed until after thirty (30) days written Notice has been given to Co-Holders. Co-Holders may at any time require Owner to provide Co-Holders with copies of the insurance policy(s) or other documentation that are or were in effect during a specific period of commercial use as required by Co-Holders.

Co-Holders shall retain the right at any time to review the coverage, form, and amount of the insurance required by this Easement. If, in the opinion of Co-Holders, the insurance provisions in this Easement do not provide adequate protection for Co-Holders, then Co-Holders may require Owner to obtain insurance sufficient in coverage, form, and amount to provide adequate protection. The Co-Holders' requirements shall be reasonable but shall be designed to assure protection for and against the kind and extent of the risks which exist at the time a change in insurance is required. Co-Holders shall notify Owner in writing of changes in the insurance requirements and Owner shall deposit copies of acceptable insurance policy(s) or other documentation required by Co-Holders thereof, with the Co-Holders incorporating the changes within thirty (30) days of receipt of the Notice.

The procuring of the required policy(s) of insurance shall not be construed to limit Owner's liability under this Easement nor to release or relieve Owner of the

indemnification provisions and requirements of this Easement. Notwithstanding the policy(s) of insurance, Owner shall be obligated for the full and total amount of any damage, injury, or loss caused by Owner's negligence, neglect connected with this Easement, or violation of Easement terms.

The Parties agree that any insurance maintained by Co-Holders will apply in excess of, and not contribute with, insurance provided by Owner's policy.

8. Owner shall follow all Laws.

9. Upon Notice, Owner shall allow Co-Holders to inspect the commercial recreational uses for compliance with the terms and conditions of this Section III.F.

10. Primary Co-Holder, after consulting with Owner reserves the right to impose additional, but reasonable terms and conditions, as it deems necessary to protect the Conservation Values of this Easement.

G. Construction of Structural Improvements. The construction or reconstruction of any Structural Improvement within the Protected Property is permitted only as authorized in this Easement, provided that such Structural Improvements do not impair the Conservation Values and are subordinate to and supportive of the Purpose of this Easement, and then only on the condition that Owner obtains all required permits and approvals from all applicable Governmental Authority and follows all Laws.

1. *No Permanent Residences.* No permanent residences (defined for purposes of this Easement as the use of any Structural Improvements for overnight stays for more than ninety (90) days in a calendar year) shall be permitted on the Protected Property, except those allowed in Limited Improvement Areas in Section III.G.3. of the Covenants and Restrictions.

2. *Maintenance or Replacement.* Existing Structural Improvements within the Protected Property are identified in the Baseline Documentation. Owner may maintain, repair, remodel, and make limited additions to any existing Structural Improvements. Owner may also demolish and replace any Structural Improvements with one of similar size, function and use, in the same general locations.

3. *Limited Improvement Areas and Building Envelopes.* The Parties acknowledge and agree that Structural Improvements should be clustered and concentrated in limited and specific areas on the Protected Property ("Limited Improvement Areas") and in such areas that have existing Structural Improvements or have otherwise been previously disturbed, as of the Effective Date of this Easement. The Parties have identified five (5) such Limited Improvement Areas that are depicted on Exhibits B and C, and collectively comprising ten (10) acres of the Protected Property. The location of Limited Improvement Areas, and Building Envelope and Structural Improvements within the Limited Improvement Areas are subordinate to and supportive of the Purpose of this Easement to protect in perpetuity the Conservation Values of the Protected Property, as defined in Section II.B. of the Recitals and Section I of the Covenants and Restrictions.

Structural Improvements identified in this Section III.G.3. are restricted to Building Envelopes within the Limited Improvement Areas to prevent any harm to the Conservation Values of the Protected Property. Accordingly, the Parties herein confirm that Owner's exercise of the following reserved rights within the Limited Improvement Areas shall not cause harm to or have any adverse impact on the Conservation Values of the Protected Property.

After Consultation with and Approval by Primary Co-Holder with regard to specific location and size, Owner shall have the right to designate from within the Limited Improvement Areas, a total of five (5) locations where Structural Improvements and associated activities will be contained ("Building Envelope") for purposes such as residences, including worker housing, cabins, bunkhouses, and commercial, recreational, and educational structures, provided the following requirements are met:

(a) Each Limited Improvement Area shall be no more than two (2) acres in size and their locations shall not change from as mapped and described in Exhibits B and C;

(b) The location of the Building Envelopes, at their time of designation, shall be surveyed and mapped, and marked on the ground with monumented corners. Maps shall be provided to Co-Holders;

(c) Once a Building Envelope is designated and surveyed, the Building Envelope may not be moved or relocated;

(d) With the Approval of Primary Co-Holder, Grantor may construct one new structure within each of the five (5) Building Envelopes;

(e) Within each Building Envelope, Grantor may also construct one (1) additional outbuilding, which may be a garage for motor vehicles, a storage shed, maintenance-vehicle enclosure, improvements needed to stage materials needed for permitted improvements, or nursery/greenhouse. Additional outbuildings shall not include dwelling spaces of any kind nor be used for human habitation;

(f) Reasonable accessory structures, including, but not limited to, restrooms, may also be constructed in conjunction with the structures;

(g) The architectural drawings of the Structural Improvements shall be submitted to Primary Co-Holder for Approval as to size, location, and design;

(h) The collective size of all Structural Improvements, including outbuildings and accessory structures, within any one Building Envelope shall not exceed 2,500 square feet of enclosed floor area.

(i) The height of all Structural Improvements is limited to the height allowed by county zoning, or twenty (20) feet measured from natural or finish grade,

whichever is lower. Nothing in this Easement shall be construed to allow Structural Improvements to be built in a manner that violates any applicable Laws, including land use and zoning laws and building code;

(j) The total area of all Structural Improvements existing at any one time within the five (5) Building Envelopes shall not exceed twelve thousand five hundred (12,500) square feet; and

(k) Structural Improvements shall not include new construction or development of utility lines within the Limited Improvement Areas. New Structural Improvements shall be off-grid and not connect to existing utilities.

4. *Conservation or Restoration Based Improvements.* Owner may construct, maintain, repair, enlarge, and replace Structural Improvements on the Protected Property to facilitate conservation or restoration activities and objectives as described in the Plan, after Consultation with and Approval by Primary Co-Holder. These improvements shall include, but are not limited to, nursery/greenhouses, protective fenced enclosures, flood or erosion control structures, and fire lookout towers.

5. *Roads.* Existing roads within the Protected Property are identified in the Baseline Documentation. The Baseline Documentation also identifies a proposed new road, which for purposes of this Easement shall be an existing road. After Consultation with Primary Co-Holder, Owner may establish new unimproved roads and trails, or relocate unimproved roads and trails for the purpose of improving or protecting the Conservation Values, accessing or repairing fences for management purposes, reducing soil erosion or improving the driving surface and condition. Relocation of Improved Roads or construction of new Improved Roads requires Approval by Primary Co-Holder unless otherwise set forth in the Plan.

6. *Utilities.* Except as otherwise specifically permitted under this Easement, no Utility lines shall be constructed, developed, or relocated into, on, over, under, or across the Protected Property without prior Approval by Primary Co-Holder. Primary Co-Holder may grant Approval if it determines, in its sole discretion, that any such improvement would be consistent with the objectives of this Easement. Owner shall have the right to maintain, repair, remove, or replace existing Utility improvements on the Protected Property as long as such improvement is the same size and in the same location as existing Utilities and does not harm the Conservation Values of this Easement.

7. *Fences.* Owner may repair, replace, and remove existing fences and gates anywhere on the Protected Property. Owner may erect property boundary fencing on the Protected Property. Except for property boundary fencing, new fences and gates shall require Approval by Primary Co-Holder and shall be constructed in a manner which reasonably preserves and protects the Conservation Values.

8. *Water Resources.* Owner may maintain, enhance and develop water resources on the Protected Property for permitted forestry uses, agricultural uses, fish and wildlife uses, domestic needs, educational and recreational uses, in accordance with

applicable Laws. Permitted uses include the following: the right to restore, enhance and develop water resources, including ponds and reservoirs for firefighting purposes; to locate, construct, repair, and maintain irrigation systems; to develop wells, water storage and delivery systems. Development of water resources that result in ground or surface disturbance must receive Approval by Primary Co-Holder. Owner agrees that water uses are for the Protected Property, and that exportation of water outside the Protected Property is strictly prohibited.

9. *Cultural, Historical and Archaeological Sites.* Owner may maintain, preserve and protect, and may establish appropriate buffers around any cultural, historical or archaeological sites located within the Protected Property provided that all work is conducted in accordance with the Law.

H. Motorized Vehicles and Equipment. Owner may use motorized vehicles and equipment for permitted land management activities allowed under applicable Laws, including but not limited to, tractors, mowers, trucks, ATV's, excavators, bulldozers, graders, chainsaws and chippers as long as such use does not harm the Conservation Values of this Easement.

I. Access by Native Hawaiians. Nothing herein shall prevent the exercise of any rights of Native Hawaiians for traditional and customary practices as may be required by Law.

IV. Prohibitions and Other Restrictions on the Protected Property

The following activities and uses are prohibited or restricted unless an exception is expressly provided below or elsewhere in this Easement:

A. Subdivision. The legal or "de facto" division, subdivision or partitioning of the Protected Property.

B. Dwellings. The construction of any type of dwelling or use of a structure as a permanent dwelling or structure (e.g., single family home, timeshare units, resort units, fraction interest units), except those allowed in Limited Improvement Areas in Section III.G.3. of the Covenants and Restrictions. This restriction, however, does not prevent the use of some portions of the Protected Property for transient accommodation in non-permanent structures.

C. Uses and Activities Inconsistent with the Purpose of this Easement. Any use of, or activity on, the Protected Property which is inconsistent with the Purpose of this Easement or which impairs the Conservation Values is prohibited, and Owner acknowledges and agrees that it will not conduct, engage in, or permit any such use or activity. The following uses or activities, shall be prohibited:

1. *Damage to Vegetation.* Any damage to native vegetation in the Protected Property, except as necessary to carry out the construction or maintenance of permitted

structures or improvements, or harvest management activities permitted in Section III of the Covenants and Restrictions.

2. *Alteration of Land.* The alteration of the surface of the Protected Property, including the excavation or removal of soil, sand, gravel, rock, lava, peat, or sod, except as reasonably necessary or appropriate to carry out the construction or maintenance of permitted structures or improvements, or other uses and activities permitted in Section II of the Covenants and Restrictions. Any excess fill from permitted excavations on the Protected Property may be exported off of the Protected Property.

3. *Erosion or Water Pollution.* Any use or activity that causes or is likely to cause significant, verifiable soil degradation or erosion, or significant, verifiable pollution of any surface or subsurface waters.

4. *Waste Disposal.* The long-term disposal or storage of rubbish, garbage, debris, unregistered vehicles, abandoned equipment, parts thereof, or other unsightly, offensive, or Hazardous Materials on the Protected Property.

5. *Maintaining Predators.* The intentional feeding or maintaining of free-ranging predator colonies (i.e., mongooses, rats, feral dogs, or feral cats) on the Protected Property.

6. *Mining.* The exploration for, or development and extraction of, minerals and hydrocarbons and geothermal resources on, below or through the surface of the Protected Property.

7. *Industrial or Commercial Uses.* Uses and activities not permitted under Section II or that are inconsistent with maintaining Forest Cover and that could negatively impact the Conservation Values protected by this Easement.

8. *Introduced Species.* The introduction or release of non-native invasive species (defined as any plant listed in the Hawaii-Pacific Weed Risk Assessment, or otherwise designated by the Hawaii Invasive Species Council, as high risk or potentially high risk, as it may be amended from time to time) or non-naturalized plant or animal species, with the exception of species as described in the Plan or as needed to maintain Conservation Values, and receive Approval by Primary Co-Holder. Desirable nonnative plant species needed to improve and stabilize soils or improve habitat for native birds may be introduced, but should comply with recommendations in the Plan and require Primary Co-Holder's Approval.

9. *Signs.* No signs or billboards or other advertising displays may be placed on the Protected Property, except signs whose placement, number and design do not diminish the scenic character of the Protected Property and which are displayed to: (1) state the name and address of the Protected Property and the names of persons responsible for the Protected Property, (2) regulate permitted on-site activities, including giving trail directions, (3) advertise the Protected Property for sale or rent, (4) post the

Protected Property to control unauthorized entry or use, or (5) enhance educational activities concerning the Protected Property and Conservation Values.

10. *Environmental Laws.* The violation of, knowing allowance, or knowing continuation of any violation of any applicable Laws relating to protection of the air, water, or soil, human health and the environment (“Environmental Law”) by Owner, Owner’s agents, employees, business invitees, or third parties whom Owner has the right and ability to reasonably control.

11. *Easements, Leases, Contracts and Rights-of-way.* Unless otherwise allowed herein, third-party easements, leases, contracts, or rights-of-way for any period longer than ten (10) years shall not be granted across the Protected Property after the Effective Date unless such encumbrances have received advance Approval from Primary Co-Holder and the USDA Forest Service. Approvals may be withheld if Primary Co-Holder or the USDA Forest Service determine, in their sole discretion, that such encumbrance would be inconsistent with the purposes of this Easement or would affect the Conservation Values of the Protected Property. Third-party easements, leases, contracts, or rights-of-way for ten (10) years or less may be Approved through the Plan approval process.

V. Ecosystem Service Markets Participation

Owner may engage in ecosystem services markets under other programs but such action must not adversely affect the interest granted under the easement to the Co-Holders or the Co-Holders’ right of enforcement or be inconsistent with or defeat the Purpose of this Easement.

No agreements relating to ecosystem service markets shall be made regarding the Protected Property that is or is likely to become inconsistent with the FLP purposes, terms of the easement, or other documents incorporated by reference. If Owner wishes to enter into such an agreement, Owner will notify the Primary Co-Holder of any proposed participation in ecosystem service markets Owner deems compatible with the Purposes and terms of the Easement and related documents and explain why they believe market participation is compatible. The Primary Co-Holder will determine the compatibility of the market participation. As needed and appropriate to make the determination, Primary Co-Holder will consult with the USDA Forest Service. If it is determined to be compatible, Primary Co-Holder will provide an approval and authorization letter to the landowner and include the letter and ecosystem service market participation documentation as an attachment to the current Plan. As part of their monitoring of this Easement, Co-Holders may review and monitor all ecosystem service market participation for compatibility with FLP purposes and requirements.

VI. Rights Conveyed to Co-Holders

To accomplish the Purpose of this Easement the following rights are conveyed to Co-Holders:

A. Monitoring Easement. Co-Holders shall have the right to monitor the Protected Property to determine if a violation of this Easement has occurred.

B. Protection. Co-Holders shall have the right to enforce the provisions of this Easement so as to: (1) preserve and protect the Protected Property in perpetuity; (2) prevent any use of, or activity on, the Protected Property that will impair or interfere with the Conservation Values or the Purpose of this Easement; and (3) enhance the Conservation Values of the Protected Property.

C. Access. Co-Holders have the right to enter the Protected Property for the purpose of quarterly public access, making inspections to monitor compliance with this Easement, and for enforcement purposes as follows:

1. *Annual Monitoring*. Upon seven (7) days' Notice to Owner in the manner set forth in Section VII.F., Primary Co-Holder shall have the right to enter the Protected Property, including building interiors, in order to monitor Owner's compliance with, and otherwise enforce the terms of, this Easement, or to make a determination regarding the appropriateness of a requested use or activity.

2. *Other Entry*. Where Primary Co-Holder shall, in its sole discretion, have a reasonable belief that there is a threat of violation of this Easement or a significant threat to any of the Conservation Values or the Purpose of this Easement, Primary Co-Holder has the right to enter the Protected Property, including building interiors, without Notice. However, where time permits, Primary Co-Holder shall make good faith efforts to provide Notice to Owner in the manner set forth in Section VII.F.2.

3. *Public Access*. In connection with the quarterly public access to the Protected Property provided in Section III.E., Secondary Co-Holder and its invitees shall be allowed access upon fourteen (14) days' prior Notice to Owner. Public access may be limited to protect the Protected Property from invasive species introductions.

4. Primary Co-Holder shall be responsible for damage or personal injury resulting from acts or omissions of state employees while acting within the scope of their employment arising from or in connection with the annual monitoring or other entry upon the Protected Property to the extent that the State's liability for such damage or injury has been determined by a court or otherwise agreed to by the State. The State shall pay for such damages and injury to the extent that funds have been authorized and appropriated by the Legislature for such purpose, and the funds have been allocated by the executive budget process.

5. Secondary Co-Holder shall be responsible for damage or personal injury resulting from acts or omissions of County employees while acting within the scope of their employment arising from or in connection with authorized County access or other entry upon the Protected Property to the extent that the County's liability for such damage or injury has been determined by a court or otherwise agreed to by the County. The County shall pay for such damages and injury to the extent that funds have been

authorized and appropriated by the Hawai'i County Council for such purpose, and the funds have been allocated by the executive budget process.

6. *Means of Accessing the Protected Property.* Co-Holders' right to enter the Protected Property includes a right-of-way to the Protected Property.

D. Enforcement and Remedies. Co-Holders shall have the right to enforce this Easement and the covenants and restrictions herein, including, but not limited to, the right of public access to the Protected Property and the right to enjoin any use of, or activity on, the Protected Property that is inconsistent with the terms and Purpose of this Easement, an impairment to the Conservation Values, or which is prohibited by this Easement, and to require the restoration of such areas or features of the Protected Property as may be damaged by uses or activities prohibited by the provisions of this Easement.

1. *Notice of Violation, Corrective Action, Opportunity to Cure.* If either Primary or Secondary Co-Holder determines that Owner is in violation of the terms of this Easement or that a violation is threatened, Co-Holder shall give written Notice to Owner (in the manner set forth in Section VII.F.) of such violation and demand that Owner take corrective action sufficient to cure the violation (within the permitted time periods set forth in Section VI.D.2.) and, where the violation involves injury to the Protected Property or Conservation Values, to demand that Owner restore the portion of the Protected Property so injured to its prior condition in accordance with a plan approved by Co-Holders.

2. *Owner's Failure to Cure.* Either Primary or Secondary Co-Holder may bring an action as provided in this Section VI.D. if Owner:

(a) Fails to cure or prevent the violation within thirty (30) days after receipt of Notice thereof; or

(b) Under circumstances where the violation cannot reasonably be cured within the thirty (30) day period, fails to begin curing such violation within the thirty (30) day period or fails to continue diligently to cure such violation until finally cured.

3. *Co-Holders' Remedies.* Co-Holders' rights and remedies identified in this Easement shall apply equally in the event of either actual or threatened violations of the terms of this Easement and shall be cumulative and shall be in addition to all remedies now or hereafter existing at Law or in equity.

4. *Injunctive Relief.* Co-Holders shall be entitled to pursue and enforce any and all remedies as may be available at Law or pursuant to this Easement, including damages pursuant to HRS § 198-5 or any successor provisions then applicable. Co-Holders' rights under this Section apply equally in the event of either actual or threatened violations of the terms of this Easement. Owner agrees that Co-Holders' remedies at Law for any violation of the terms of this Easement are inadequate and that Co-Holders shall be entitled to injunctive and other relief to which Co-Holders may be entitled, including

specific performance of the terms of this Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Co-Holders' remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now or hereafter existing at Law or in equity.

5. *Money Damages.* Co-Holders shall be entitled to recover money damages for any injury to the Conservation Values protected by this Easement or for the violation of the terms of this Easement. In assessing such injury, there may be taken into account, in addition to the cost of restoration, the reasonable monetary value of damage to Conservation Values, including commercial and ecosystem services, to the Protected Property, and other damages. Monetary damages collected would go toward enforcement of the Easement terms and conditions, restoration of Conservation Values, and attorneys' fees.

6. *No Bond Required.* Any action for injunctive relief or damages may be taken without Co-Holders being required to post a bond or provide other security. Owner is barred from using this provision regarding damages as an affirmative defense against Co-Holders' rights to injunctive relief.

7. *Emergency Enforcement.* If either Primary or Secondary Co-Holder, in Co-Holder's sole discretion, determines that a violation of this Easement has created circumstances requiring immediate action to prevent or mitigate significant damage to the Conservation Values of the Protected Property, Co-Holder may pursue its remedies under this section without prior Notice to Owner or without waiting for the period provided for cure to expire; provided, that Co-Holder shall first make a reasonable attempt under the circumstances to give verbal/telephone Notice to Owner of the violation and proposed action.

8. *Costs of Enforcement.* In the event Co-Holders must enforce the terms of this Easement, the costs to restore a violation of this Easement and Co-Holders' reasonable enforcement expenses, including attorney's fees, shall be borne by Owner. In the event that Co-Holders secures redress for a violation of this Easement without initiating or completing a judicial proceeding, the costs of such restoration and Co-Holders' reasonable expenses shall be borne by Owner. If Owner ultimately prevails in any judicial proceeding initiated by Co-Holders in good faith to enforce the terms of this Easement, each Party shall bear its own attorneys' fees and costs

9. *Co-Holders Forbearance.* Forbearance by Co-Holders to exercise their rights under this Easement in the event of any breach of any terms of this Easement by Owner, their agents, employees, contractors, family members, invitees or licensees shall not be deemed or construed to be a waiver by Co-Holders of such term or any of Co-Holders' rights under this Easement. No delay or omission by Co-Holders in the exercise of any right or remedy upon any breach by Owner shall impair such right or remedy or be construed as a waiver.

10. *Waiver of Certain Defenses.* Owner acknowledges that it has carefully reviewed this Easement and has consulted with and been advised by counsel of its terms

and requirements. In full knowledge of the provisions of this Easement, Owner hereby waives any claim or defense it may have against Co-Holders under or pertaining to this Easement based upon waiver, laches, estoppel, or prescription that it may have as of the Effective Date.

11. *Acts Beyond Owner's Control.* Nothing contained in this Easement shall be construed to entitle Co-Holders to bring any action against Owner to abate, correct, or restore any condition on the Protected Property or to recover damages for any injury to or change in the Protected Property resulting from causes beyond Owner's control, including, without limitation, fire, flood, storm, and earth movement, or for acts of wild or feral animals or trespassers, that Owner could not have reasonably anticipated or prevented, or from any prudent action taken by Owner under emergency conditions to prevent, abate, or mitigate significant injury to the Protected Property resulting from such causes.

12. *Restoration of Acts of Destruction.* Reasonable restoration of acts of destruction (more than 5 acres) to vegetation on the Protected Property that are incurred by Owner in connection with ecotourism ventures, recreational, or educational or research activities, or by guests will be an obligation of Owner and must be conducted in Consultation with, and with the written Approval of the Primary Co-Holder. If Owner fails to restore the Conservation Values and the Protected Property to the satisfaction of the Primary Co-Holder within one year from the date of said destruction, or if the destruction cannot reasonably be restored within one year of the date of said destruction, and Owner fails to begin restoring said destruction within the one year period or fails to continue diligently to restore said destruction until finally restored, restoration may be done by Co-Holders. The cost of any restoration by Co-Holders shall be the responsibility of Owner.

VII. Notice; Consultation; Approval; Breach of Notice or Approval Procedures; Compliance Certificates; Notices

A. Notice. To ensure that any use or activity proposed by Owner is designed and carried out in a manner consistent with the terms and Purpose of this Easement, Owner shall notify Primary Co-Holder, Secondary Co-Holder, or Co-Holders as may be required under the terms of this Easement, within thirty (30) days prior to undertaking certain activities permitted only after prior Notice as identified in this Easement. The Notice shall describe the nature, scope, design, location, timetable, and any other material aspect of the proposed activity in sufficient detail to permit Co-Holders to understand the nature of the proposed use or activity.

B. Consultation. When this Easement requires a consultation ("Consultation"), Primary Co-Holder and Owner shall meet, either in person or by other electronic means, to discuss the proposed use or activity in good faith prior to any action being taken by Owner. The meeting shall take place within thirty (30) days of a request by Owner.

C. Approval. Whenever this Easement requires Owner to obtain Approval by Primary Co-Holder, Owner shall follow the procedures set forth in this Section VII.C. Primary Co-Holder retains the final decision-making authority regarding all requests for

Approval.

1. *Approval by Primary Co-Holder.* The Owner's request for Approval by Primary Co-Holder shall be in writing. The request shall describe the nature, scope, location, timetable, identify its conformity with this Easement, and when applicable, evidence of conformity with existing land use regulations, and any other material aspect of the proposed activity. Delivery of the request shall conform to the service methods set forth in Section VII.F.4. Primary Co-Holder may consult with the USDA Forest Service on uses that may impact the Purpose, Conservation Values, or forest management of the Protected Property during the Approval process. Primary Co-Holder shall have sixty (60) days from receipt of the request in which to approve, disapprove, or approve subject to modification, the request for Approval. If Primary Co-Holder reasonably requires more than sixty (60) days to respond to the notice, Primary Co-Holder may so notify Owner in writing during the sixty (60) day period and will have an additional thirty (30) days to respond.

2. *Further Information.* If Primary Co-Holder reasonably determines that it requires additional information regarding the requested use or activity to process any request for Approval, Primary Co-Holder must request in writing such information, and shall specifically identify, to the extent possible, the information requested. Primary Co-Holder shall have sixty (60) days from receipt of all information requested in which to request additional time to respond, approve, disapprove, or approve subject to modification, the request for Approval. If no request for additional information is made, the request for Approval shall have been deemed received upon delivery to Primary Co-Holder.

3. *Alteration of Process for Approval by Primary Co-Holder.* The Parties may agree to alter the timing and approach for Approval; however, any such agreement must be in writing signed by both Owner and Primary Co-Holder.

4. *Withholding Approval.* In the case of withholding of Approval, Primary Co-Holder shall notify Owner in writing with reasonable specificity of the reasons for withholding of Approval, and the conditions, if any, on which Approval by Primary Co-Holder might otherwise be given.

5. *Failure to Respond.* If Primary Co-Holder fails to timely respond to Owner's request, the proposed enterprise, use or activity shall automatically be deemed a denial. The denial shall be considered procedural and not substantive.

6. *Standard for Approval.* Primary Co-Holder shall not unreasonably withhold Approval of a proposed use or activity requiring Approval under this Easement where the proposed activity or use will not be inconsistent with the Purpose of this Easement or impair the Conservation Values.

7. *Dispute.* If a dispute arises between Owner and Co-Holders concerning an Approval request or any procedures in this Section VII.C., either Party may request a meeting. Such meeting shall be held either in person or by other electronic means, unless

otherwise agreed to by the Parties. The meeting shall take place within thirty (30) days of the meeting request, at which time the Parties shall make a good faith effort to resolve the dispute.

D. Breach of Notice or Approval Procedures. If Owner undertakes any action for which Approval is required under this Easement, but without first obtaining such Approval, Owner shall be deemed to be in material breach of this Easement and Co-Holders shall be entitled to such rights or remedies as may be available under Section VI of this Easement. Notwithstanding the foregoing, Co-Holders may permit Owner to cure the breach by submitting after-the-fact communications and documents showing the conformity of such activity with this Easement and with any relevant Law, or by showing, despite a lack of conformity with this Easement or the Laws, that the action was justified because of an Emergency.

E. Compliance Certificates. Primary Co-Holder, as the primary steward and enforcer of this Easement, shall within sixty (60) days of a request by Owner, execute and deliver to Owner, or to any party designated by Owner, any document, including an estoppel certificate, that certifies Owner's compliance or lack thereof with obligation of Owner contained in this Easement and otherwise evidences the status of this Easement. Such certificate shall be binding upon Co-Holders. Such certification shall be limited to the condition of the Protected Property as of the most recent inspection carried out by Primary Co-Holder. If Owner requests more current documentation, Primary Co-Holder shall conduct an inspection, at Owner's expense, within sixty (60) days of Owner's written request.

F. Notices. Any notice, demand, request, consent, or communication (collectively, a "Notice" or "Notices") that either Party desires or is required to give the other shall be in accordance with the following procedures.

1. In ordinary circumstances, the Notice shall be in writing and either served personally or sent by certified mail, return receipt requested, postage prepaid, addressed to the appropriate Party, at the appropriate address set forth below in this Section. Where Notice is served by certified mail, the receipt of notice shall be considered to have occurred on the sixth day after mailing. The serving Party may also attempt to, in addition, serve Notice pursuant to the "emergency circumstances" provisions set forth immediately below.

2. In emergency circumstances (where Notice needs to occur in 48 hours or less), the Party shall make best efforts to deliver the Notice in writing and either serve it personally, or by email or by facsimile transmission. Where Notice is served by email, the Party served the Notice shall, in addition, make concurrent attempts to notify the other Party by telephone of the Notice, and attempt to receive oral or written confirmation from the Party or the Party's attorney that the Notice has been received.

3. Notices may also be served by any other method mutually agreed to between the Parties.

4. Notices shall be served at the following addresses or to such other address as any of the Parties from time to time shall designate by written Notice to the other:

To Owner: Haloo Aina L.L.C.
P.O. Box 1677
Honokaa, HI 96727
Email: Wadelee@halooaina.com

To Primary Co-Holder: State of Hawai'i, Department of Land and Natural Resources
Attn: Administrator, Division of Forestry and Wildlife
Post Office Box 621
Honolulu, Hawai'i 96809
(808) 587-0166
Email: dlnc@hawaii.gov

With a copy to: Department of the Attorney General
State of Hawai'i
Land/Transportation Division
465 South King Street, Room 300
Honolulu, Hawai'i 96813

To Secondary Co-Holder: County of Hawai'i
Property Management Division
25 Aupuni Street Suite 1101
Hilo, Hawai'i 96720

With copy to: County of Hawai'i
Office of the Corporation Counsel
101 Aupuni Street, Suite 325
Hilo, HI 96720

If Notice is required to be provided to the USDA Forest Service, the Notice shall be in writing either served personally or sent by certified mail, return receipt requested, postage prepaid, addressed as follows:

To USDA: Director of State & Private Forestry
Attn. Program Manager, Forest Legacy
USDA Forest Service – Pacific Southwest Region (5)
1323 Club Drive
Vallejo CA 94592
Voice: 707-562-8737
TTY: 707-562-9240
Fax: 707-562-9130

VIII. Costs; Legal Requirements; Liabilities and Insurance; Taxes; Warranty and Remediation; Control; and General Indemnifications

A. Costs, Legal Requirements, Liabilities and Insurance. Owner retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Protected Property, including the maintenance of any insurance coverage desired by Owner. Owner remains solely responsible for obtaining any applicable governmental permits and approvals for any activity or use permitted by this Easement, and any such activity or use shall be undertaken in accordance with all applicable Laws. Except as set forth in Exhibit A, Owner shall keep the Protected Property free and clear of any contractual liens or encumbrances that may be senior to the terms and conditions of this Easement.

B. Taxes. Owner shall timely pay all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Protected Property by competent authority (collectively "Taxes"), including any taxes imposed upon, or incurred as a result of, this Easement, and shall furnish Co-Holders with satisfactory evidence of payment upon request. If Owner fails to pay any Taxes when due, Co-Holders are authorized, but in no event obligated, to make or advance such payment of Taxes upon three (3) days prior written Notice to Owner, in accordance with any bill, statement, or estimate procured from the appropriate authority, without inquiry into the validity of the Taxes or the accuracy of the bill, statement or estimate, and the obligation created by such payment shall bear interest until paid by Owner at the maximum rate allowed by Law in the State.

C. Warranty and Remediation.

1. Owner warrants that as of the Effective Date, to Owner's Knowledge, there are no apparent or latent defects in or on the Protected Property, other than lava tubes.

2. Owner warrants that as of the Effective Date, to Owner's Knowledge, Owner and the Protected Property are in compliance with all Laws applicable to the Protected Property and its use.

3. Owner warrants that as of the Effective Date, there is no pending or to Owner's Knowledge, threatened litigation affecting the Protected Property or any portion of the Protected Property that will materially impair the Conservation Values of any portion of the Protected Property.

4. Owner warrants that, to Owner's Knowledge, Owner is in compliance with all Environmental Laws applicable to the Protected Property as of the Effective Date. Owner covenants to operate and maintain the Protected Property from and after the Effective Date in compliance with all applicable Environmental Laws. Owner warrants that Owner has received no notices from any Governmental Authority of any violation or alleged violation of, non-compliance or alleged noncompliance with, or any liability under any Environmental Law relating to the operations or conditions of the Protected Property

as of the Effective Date. Owner warrants that, as of the Effective Date, there has been no release or threatened release of any Hazardous Materials on, at, beneath or from the Protected Property exceeding regulatory limits.

For purposes of this Easement, whenever the phrase “to Owner’s Knowledge” is used, it will be deemed to mean and is limited to the current actual knowledge only of Wade Lee and the owners of Haloa Aina, L.L.C., without inquiry, and not any implied, imputed or constructive knowledge of such individual; it being understood and agreed that such individual will have no personal liability in any manner whatsoever hereunder or otherwise related to this Easement.

5. Owner promises to indemnify and hold harmless Co-Holders against all costs, claims, demands, penalties and damages, including reasonable attorneys’ fees, arising from or connected with the release or threatened release of any Hazardous Materials on, at, beneath or from the Protected Property, or arising from or connected with a violation of any Environmental Laws by a prior owner of the Protected Property. Owner’s indemnification obligation shall not be affected by authorizations provided by Co-Holders to Owner with respect to the Protected Property.

6. If at any time, there occurs, or has occurred, a release in or on the Protected Property of a Hazardous Material in violation of Laws, Owner shall, at its own expense, promptly take all actions as shall be required under applicable Environmental Law for the clean-up of any and all portions of the Protected Property, as the case may be, so that a No Further Action (NFA)/No Further Remediation (NFR) Letter can be issued by the State of Hawaii Department of Health, or its successor agency, acknowledging the Hazardous Substance has been abated to the satisfaction of the State of Hawaii Department of Health.

D. Control. Owner shall not itself perform or knowingly permit any Prohibited Activity to be performed by Owner, its agents, employees, invitees, or those within Owner’s ability to reasonably control. Owner will take reasonable steps to prevent, halt and/or enjoin any Prohibited Activity by a third party. Nothing in this Easement shall be construed as giving rise to any right or ability in Co-Holders to exercise physical or managerial control over the day-to-day operations of the Protected Property, or otherwise become an “operator” with respect to the Protected Property within the meaning of the Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended, or any other Environmental Law.

E. General Indemnifications. Owner agrees to release and hold harmless, indemnify, and defend Co-Holders and their departments, divisions, members, directors, officers, employees, agents, invitees, and contractors, and each of the personal representatives, heirs, successors, and assigns of such parties (collectively “Co-Holders’ Parties”) from and against all liabilities, penalties, costs, losses, damages, expenses, causes of action, claims, demands, or judgments, including, without limitation, reasonable attorneys’ fees, arising from or in any way connected with:

1. Owner’s failure to perform the obligations and covenants set forth in this

Easement;

2. Injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on the Protected Property, unless due to the negligence of any of the Indemnified Co-Holders' acting within the scope of their authority;

3. In the case the Co-Holders shall, without any fault on the Co-Holders' part, be made a party to any litigation commenced by or against Owner; and

4. The obligations, covenants, representations and warranties in Sections VIII.A through VIII.E.

IX. Transfer of Protected Property; Condemnation

A. Transfer of Protected Property. Owner intends that all three parcels be kept together in perpetuity. Therefore, conveyance or devise of the Protected Property by individual parcel is prohibited.

Owner agrees to incorporate by reference the terms of this Easement in any deed or other legal instrument by which Owner divests itself of any interest in all or a portion of the Protected Property, including, without limitation, a leasehold interest. Owner further agrees to give written Notice to Co-Holders of the proposed transfer of any such interest at least thirty (30) days prior to the date of such transfer in the manner provided in Section VII.F. The Notice to Co-Holders shall include the name, address, and telephone number of the transferee or the transferee's representative. Transfer of the Protected Property does not extinguish or alter any of the provisions of this Easement, which runs with the Land. The failure of Owner to perform any act required by this paragraph shall not impair the validity of this Easement or limit its enforceability in any way.

Within one year of a conveyance or devise, the new landowner shall be required to submit a management plan, according to the terms and conditions in Section II.A. of the Covenants and Restrictions and consistent with the Conservation Values of the Protected Property.

B. Condemnation. If Owner or Co-Holders are notified of a proposal to condemn all or any portion of the property subject to this Easement, Co-Holders and the USDA Forest Service must immediately be notified.

If all or any of the Protected Property shall be taken by exercise of the power of eminent domain or acquired by purchase in lieu of condemnation, whether by public, corporate, or other authority, so as to terminate this Easement, in whole or in part, Owner and Co-Holders shall act jointly to recover the full value of the interest in the Protected Property subject to the taking or in lieu purchase and all direct or incidental damages resulting from the taking or in lieu purchase. All expenses reasonably incurred by Owner and Co-Holders in connection with the taking or in lieu purchase shall be paid out of the amount recovered. Except as provided by applicable Law, Owner and Co-Holders agree

that Co-Holders' share of the balance of the amount recovered shall be as determined as described in Section X.C.

The failure of Owner to perform any act required by this Section IX.B. shall not impair the validity of this Easement or limit its enforceability in any way.

X. Limitations on Amendment; Funding by Secondary Co-Holder; Assignment; Extinguishment

The provisions of this section shall apply notwithstanding, and in addition to, any other conditions or limitations that may be imposed on the amendment, assignment, or extinguishment of this Easement

A. Limitations on Amendment. This Easement may be amended only with the written approval of Co-Holders and the USDA Forest Service FLP (Region 5 Pacific Southwest Region) program manager, and they are under no obligation to agree to any amendment or consult or negotiate regarding any amendment. An amendment may be approved by the Co-Holders and the USDA Forest Service FLP (Region 5 Pacific Southwest Region) program manager only if it will: (1) serve the public interest and not diminish the benefits provided to the public; (2) have a beneficial or neutral effect on the Conservation Values protected by this Easement; (3) be consistent with the purpose of the FLP and the Purpose of this Easement; (4) not confer an economic benefit on private persons (private inurement or private benefit in the case of a charitable organization holder); (5) be consistent with the intent of the original Owner of this Easement and any funding entities; (6) not diminish the perpetual duration of this Easement or negatively affect the status or rights of the Co-Holders, or the United States with regard to this Easement; and (7) otherwise comply with all federal, state and local laws and regulations.

Amendments to make boundary line adjustments are permitted only in the case of technical errors made in the survey or legal description.

Any approved amendment must be recorded in the State of Hawai'i Bureau of Conveyances by Owner and a copy of the recorded amendment must be provided to Co-Holders and the USDA Forest Service Pacific Southwest Region program manager within thirty (30) days of recordation. Any purported amendment that is recorded without the prior written approval of Co-Holders and the USDA Forest Service Pacific Southwest Region program manager will be null and void.

B. Provision required by the Hawai'i County Charter. Funding for this Easement was acquired with moneys from Hawai'i County's Public Access, Open Space, and Natural Resources Preservation Fund. The County's interest in this Easement shall be held in perpetuity for the use and enjoyment of the people of Hawai'i County and may not be sold, mortgaged, traded or transferred in any way.

C. Assignment (Transfer). If Primary Co-Holder ever ceases to exist or is no longer willing and able to hold this Easement for the purpose for which it was created or carry out the responsibility imposed on the Primary Co-Holder by the terms of this Easement,

the Primary Co-Holder must identify and select an appropriate entity to which this Easement must be transferred. Subject to Section X.B., this Easement may be transferred or assigned by Primary Co-Holder only to a Governmental Authority that (i) is eligible to hold this Easement under the FLP, (ii) is willing and able to hold this Easement for the Purpose for which it was created, and (iii) expressly agrees to assume the responsibility imposed on the holder by the terms of this Easement. The Parties recognize and agree that the benefits of this Easement are in gross and assignable in whole but not in part. In the event of any transfer of this Easement or of any of its monitoring and enforcement rights hereunder, Co-Holder shall ensure that USDA Forest Service and Owner are provided at least ninety (90) days prior written Notice. Transfer of the Easement does not extinguish or alter any of the provisions of this Easement, which runs with the Land.

D. Extinguishment. Subject to Section X.B., Owner and Co-Holders acknowledge that USDA Forest Service Forest Legacy Program funding for the acquisition of this Easement is authorized by the Cooperative Forestry Assistance Act of 1978, P.L. 95-313 as amended (codified at 16 U.S.C. § 2101 et seq), and pursuant to the grant agreement “Haloa ‘Aina - Royal Hawaiian Sandalwood” [LLC] 18-DG-11052021-226 awarded by the USDA Forest Service on July 1, 2018 to the State of Hawai‘i Department of Land and Natural Resources Division of Forestry and Wildlife. The grant agreement is housed in the USDA Forest Service Regional/Area Office at the Forest Service Pacific Southwest Region Office at 1323 Club Drive, Vallejo, California, 94592, or in an archival facility per Agency policy.

This Easement shall only be extinguished if all Parties agree according to the terms expressed below. The Owner and the Co-Holders acknowledge and agree that this Easement cannot be extinguished, in whole or in part (whether through release, termination, exchange, or otherwise) unless the USDA Secretary of Agriculture (Secretary), in the Secretary’s sole and absolute discretion, consents in writing to the extinguishment and the United States is reimbursed its proportionate share of the value of this Easement or the portion thereof that is extinguished at the time of extinguishment. The form of the United States’ reimbursement under this paragraph (whether it is received in cash or in kind) shall be in the sole and absolute discretion of the Secretary but shall in all events be used for FLP or similar conservation purposes. The Easement shall not be deemed extinguished in whole or in part until the United States receives reimbursement as provided in this paragraph.

The United States’ “proportionate share” is %, which was determined by dividing the FLP’s contribution to the acquisition of this Easement by the value of this Easement at the time of its acquisition, and expressing the result as a percentage. The United States’ proportionate share shall remain constant over time. The “value of this Easement or the portion thereof that is extinguished” shall be the value of such interest immediately before the extinguishment as determined using the before and after or similar appraisal method in an appraisal that meets the Uniform Acquisition Standards of Federal Land Acquisition (UASFLA) and is completed by a certified general appraiser approved by Co-Holders and the USDA Forest Service Region 5.

Secondary Co-Holder's "proportionate share" is [REDACTED]%, which was determined by dividing the Secondary Co-Holder's contribution to the acquisition of this Easement by the value of this Easement, on the Effective Date, and expressing the result as a percentage. The "value of this Easement or the portion thereof that is extinguished" shall be the value of such interest immediately before the extinguishment as determined using the before and after or similar appraisal method in an appraisal that meets the UASFLA and is completed by a certified general appraiser approved by Co-Holders and the USDA Forest Service Region 5.

No inaction or silence by Co-Holders or the Secretary shall be construed as approval of an extinguishment or as an abandonment of this Easement in whole or in part. Any purported extinguishment executed without the prior written consent of Co-Holders and the Secretary will be null and void. The provisions of this paragraph shall survive any partial extinguishment.

XI. General Provisions

A. Reasonableness Standard. Owner and Co-Holders shall follow a reasonableness standard and shall use their best efforts to make any determinations that are necessary or are contemplated to be made by them (either separately or jointly) under this Easement in a timely manner and shall cooperate with one another and shall take all other reasonable action suitable to that end.

B. Controlling Law. The interpretation and performance of this Easement shall be governed by and construed in accordance with the laws of the State of Hawai'i.

C. Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Easement shall be liberally construed to fulfill the Purpose of this Easement and the policy and purpose of HRS Chapter 198. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the Purpose of this Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

D. Severability. If any provision of this Easement, or its application to any person or circumstance, is found to be invalid, the remainder of the provisions of this Easement, or the application of such provision to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected.

E. Entire Agreement. This instrument sets forth the entire agreement of the Parties with respect to the Protected Property and supersedes all prior discussions, negotiations, understandings, or agreements between Owner and Co-Holders relating to the Protected Property, all of which are merged into this Easement. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment that complies with Section X.A.

F. No Forfeiture. Nothing contained in this Easement will result in a forfeiture or reversion of Owner's title in any respect.

G. Successors and Assigns; Runs with Land. The covenants, terms, conditions, and restrictions of this Easement shall be binding upon, and inure to the benefit of, the Parties to this Easement and their personal representatives, heirs, successors, and assigns, and shall continue as a servitude running in perpetuity with the Protected Property.

H. Termination of Rights and Obligations. A Party's rights and obligations under this Easement terminate upon transfer of the Party's interest in this Easement or Protected Property, except that liability for acts or omissions occurring prior to transfer shall survive transfer.

I. Counterparts. The Parties may execute this instrument in two or more counterparts. Each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

J. Effective Date. Owner and Co-Holders intend that the restrictions arising hereunder take effect on the day and year this Easement is recorded in the State of Hawai'i Bureau of Conveyances after all required signatures have been affixed hereto. Co-Holders may re-record this instrument at any time as may be required to preserve its rights in this Easement.

K. No Merger. Owner and Co-Holders agree to take whatever steps are necessary to ensure that merger of the fee and Easement estates does not occur in order to ensure the continued viability of this Easement.

L. Calendar Days. Unless otherwise expressly stated herein, all references to a specific number of days shall mean and refer to that specific number of calendar days.

M. Exhibits. The following Exhibits are attached hereto and made a part of this Easement:

Exhibit A: Legal Description of the Protected Property

Exhibit B: Map of the Protected Property

Exhibit C: Baseline Documentation Report

XII. Glossary

The definitions below shall have the same meaning as the reference source, where provided, and in all other cases, shall be given their natural, commonly accepted definitions. Some definitions for other terms used in this Easement are set forth in other parts of this Easement, and not included here.

1. "Approval" or "Approve" means an approval by Primary Co-Holder required prior to certain Owner actions, as identified throughout this Easement, subject to the procedures set forth in Section VII of the Covenants and Restrictions.

2. “Baseline Documentation” has the meaning set forth in Section II.C. of the Recitals.

3. “Building Envelope” has the meaning set forth in Section III.G. of the Covenants and Restrictions.

4. “Code” means the Internal Revenue Code of 1986, as now enacted or hereinafter amended, and the regulations thereunder.

5. “Co-Holders” mean the Primary Co-Holder and Secondary Co-Holder.

6. “Co-Holders’ Parties” has the meaning set forth in Section VIII.E. of the Covenants and Restrictions.

7. “Conservation Values” has the meaning set forth in Section II.B. of the Recitals and Section I of the Covenants and Restrictions.

8. “Consultation” has the meaning set forth in Section VII.B. of the Covenants and Restrictions.

9. “County” means the County of Hawai‘i.

10. “Easement” has the meaning set forth in the Preamble.

11. “Ecosystem Services Market” means institutions or settings in which numerous individuals voluntarily trade permits or credits of an ecosystem service, typically using money as the means of exchange. For the purposes of the FLP, the extraction of timber and non-timber forest products, and hunting leases are excluded from this definition of ecosystem service markets.

12. “Effective Date” has the meaning set forth in Section XI.J. of the Covenants and Restrictions.

13. “Emergency” means a sudden and serious event or an unforeseen change in circumstances that calls for immediate action to avert, control, or remedy harm.

14. “Environmental Law” or “Environmental Laws” means any and all federal, state, or county laws, rules, orders, regulations, statutes, ordinances, codes, guidelines, policies or requirements of any Governmental Authority regulating or imposing standards of liability or standards of conduct (including common law) concerning air, water, solid waste, Hazardous Materials, worker and community right-to-know, hazard communication, noise, radioactive material, resource protection, subdivision, inland wetlands and watercourses, health protection and similar environmental health, safety, building and land use as may now or at any time hereafter be in effect.

15. “FLP” means the U.S. Department of Agriculture Forest Service Forest Legacy Program.

16. “Forest Cover” means lands more than one (1) acre (0.4 hectare) in area,

with a tree canopy density of more than ten (10) percent, comprising natural or planted forest trees, including native tree species in shrubby form as a result of elevation, rainfall and other environmental factors. Forest Cover may include land in agroforestry and silvopasture use guided by the Plan to increase or sustain tree canopy cover. Forest Cover excludes fruit/nut orchards and other lands predominantly under agricultural use, even if tree canopy exceeds ten (10) percent.

17. “Forest Land” means land at least one (1) acre (0.4 hectare) in size with at least ten (10) percent cover by live trees including land that formerly had such tree cover and that will be naturally or artificially regenerated. The definition here includes all areas recently having such conditions and currently regenerating or capable of attaining such condition in the near future. Forest Land also includes unimproved roads, trails, and clearings in forest areas that have at least ten (10) percent cover. Forest Land does not include land that is predominantly under agricultural or urban land use.

18. “Forest Stand Improvement” means forest management practices that improve the vigor, stocking, composition, productivity, and quality of forest stands. Actions may include thinning to increase the growth rate of crop trees, and removal of dead and dying trees in a manner that stimulates regeneration. Improvement results from removing lower quality trees and allowing crop trees to fully use the growing space. Forest Stand Improvement can be a non-commercial activity in which there is no harvest of salable forest products or commercial practice in which salable products of a value are harvested.

19. “Governmental Authority” means any federal, state, county, or foreign government or political subdivision thereof, or any agency or instrumentality of such government or political subdivision, or any self-regulated organization or other non-governmental regulatory authority or quasi-governmental authority (to the extent that the rules, regulations or orders of such organization or authority have the force of Law), or any arbitrator, court or tribunal of competent jurisdiction.

20. “Harvest” means any commercial harvest of forest products. Harvest includes forest practices such as Forest Stand Improvement when forest product harvests are used for commercial purposes.

21. “Hazardous Materials” means any petroleum, petroleum products, fuel oil, waste oils, explosives, reactive materials, ignitable materials, corrosive materials, hazardous chemicals, hazardous wastes, hazardous substances, extremely hazardous substances, toxic substances, toxic chemicals, radioactive materials, infectious materials and any other element, compound, mixture, solution or substance which now or hereafter defined, listed, or otherwise classified, pursuant to any federal, state, or local law, regulation, or requirement as, toxic or dangerous to the air, water, or soil, or in any other way harmful or threatening to human health or the environment.

22. “HRS Chapter 198” means the law governing conservation easements in Hawai‘i, currently codified at chapter 198 of the HRS, or as hereinafter amended, or any successor provision(s) hereinafter applicable.

23. “HRS” means the Hawai‘i Revised Statutes.

24. “Improved Road” means any road that is surfaced with an impermeable material (i.e., concrete, asphalt, macadam, or chip seal).

25. “Inventory” means the systemic collection of data on the forestry resources within the Protected Property to provide information needed for sustainable forest management planning and Harvest. Forest Inventory includes comprehensive assessment of forest condition, species composition, and merchantable volume of forest products including sampling standard error and confidence interval.

26. “Land” has the meaning set forth in Section II of the Recitals.

27. “Law” or “Laws” means any statute, law, ordinance, regulation, rule, code, order, constitution, treaty, common law, judgment, decree, other requirement or rule of law of any Governmental Authority.

28. “Limited Improvement Area” means that area or those areas so identified on Exhibit B, within which Grantor may exercise those reserved rights, as set forth in Section III.G, with respect to construction and other improvements permitted within such Limited Improvement Area.

29. “Notice” or “Notices” has the meaning set forth in Section VII.A. of the Covenants and Restrictions.

30. “Owner” has the meaning set forth in the Preamble.

31. “Party” has the meaning set forth in the Preamble.

32. “Parties” has the meaning set forth in the Preamble.

33. “Plan” means the Forest Stewardship Plan which has the meaning set forth in Section II.A. of the Covenants and Restrictions.

34. “Primary Co-Holder” means the State of Hawai‘i, through its Board of Land and Natural Resources, and its representatives, successors, and assigns, subject to the assignment and succession limitations set forth in Section X of the Covenants and Restrictions. Primary Co-Holder has primary monitoring responsibility described in Section VI.C.1. of the Covenants and Restrictions and is responsible for all final decisions for all requests for Approval.

35. “Prohibited Activity” means activity inconsistent with the purpose of the Easement.

36. “Protected Property” has the meaning set forth in Section II of the Recitals. This Easement encumbers the Protected Property as described and depicted in Exhibits A and B, respectively.

37. “Purpose” has the meaning set forth in Section I of the Covenants and Restrictions.

38. "Secondary Co-Holder" means the County of Hawai'i, a municipal corporation duly organized and existing under the laws of the State of Hawai'i. Secondary Co-Holder has management responsibilities described in Section III.E. of the Covenants and Restrictions.

39. "State" means the State of Hawai'i.

40. "Structural Improvement" means any permanent or temporary building or structure with an impervious surface, and any non-affixed storage, water, and fuel tanks. Impervious surfaces include, without limitation, the footprint of buildings, structures and/or improvements, roofs, paved parking, concrete pads, breezeways, covered but not enclosed, paved or covered walkways that may connect to various portions of the structure, or unenclosed lanais. Structural footprints shall be measured along the outermost perimeter of such structures, at ground level or above, include any attached or associated decks, steps, porches, or other enclosed or open-air attachments.

41. "Taxes" has the meaning set forth in Section VIII.B. of the Covenants and Restrictions.

42. "USDA" means the United States Department of Agriculture.

43. "Utility" or "Utilities" means, without limitation, electric power lines and facilities, storm sewer facilities as required by local or state government, telephone and communications cable systems, and their respective appurtenant facilities.

Executed and effective the day and year first above written.

TO HAVE AND TO HOLD, the said Conservation Easement, unto the said Co-Holders and its successors and assigns forever.

IN WITNESS WHEREOF, the STATE OF HAWAI'I, by its Board of Natural Resources, has caused the seal of the Department of Land and Natural Resources to be hereunto affixed and the Parties hereto have caused these presents to be executed the day, month and year first above written.

Approved by the Board
of Land and Natural
Resources at its meeting
held on _____, 20__.

HALOA AINA, L.L.C.,
a Hawai'i limited liability company

By: _____

Its: _____

“Owner”

APPROVED AS TO LEGALITY,
FORM, EXCEPTIONS, AND
RESERVATIONS:

THE STATE OF HAWAI'I

Julie H. China
Deputy Attorney General
Dated: _____

By: _____

Chairperson
Board of Land and Natural Resources

“Primary Co-Holder”

COUNTY OF HAWAI'I

MITCHELL D. ROTH

Its: Mayor

RECOMMEND APPROVAL:

DEANNA S. SAKO

Finance Director

County of Hawai'i

APPROVED AS TO FORM
AND LEGALITY:

Deputy Corporation Counsel

County of Hawai'i

STATE OF HAWAI'I)
) SS.
 COUNTY OF HAWAI'I)

On this _____ day of _____, 20____, before me personally appeared _____, to me personally known, who, being by me duly sworn or affirmed, did say that such person(s) executed the foregoing instrument as the free act and deed of such person(s), and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

 Notary Public, State of Hawai'i
 Printed Name: _____
 My Commission Expires: _____

<u>NOTARY CERTIFICATION STATEMENT</u>	
Document Identification or Description:	_____
Document Date:	_____
No. of Pages:	_____
Jurisdiction (in which notarial act is performed):	

Signature of Notary	Date of Notarization and Certification Statement
Printed Name of Notary	(Notary Stamp or Seal)

STATE OF HAWAI'I)
) SS.
COUNTY OF HAWAI'I)

On this ____ day of _____, 20____, before me personally appeared _____, to me personally known, who, being by me duly sworn or affirmed, did say that such person(s) executed the foregoing instrument as the free act and deed of such person(s), and if applicable, in the capacities shown, having been duly authorized to execute such instrument in such capacities.

Notary Public, State of Hawai'i
Printed Name: _____
My Commission Expires: _____

<u>NOTARY CERTIFICATION STATEMENT</u>	
Document Identification or Description: _____	
Document Date: _____	
No. of Pages: _____	
Jurisdiction (in which notarial act is performed): _____	
Signature of Notary	Date of Notarization and Certification Statement
(Notary Stamp or Seal)	
Printed Name of Notary	

STATE OF HAWAI'I)
) SS.
COUNTY OF HAWAI'I)

On this _____ day of _____, 2021, before me personally appeared **MITCHELL D. ROTH**, to me personally known, who, being by me duly sworn, did say that he is the Mayor of the County of Hawai'i, a municipal corporation of the State of Hawai'i, that the seal affixed to the foregoing instrument is the corporate seal of said County of Hawai'i, the foregoing instrument was signed and sealed on behalf of the County of Hawai'i by authority given to said Mayor of the County of Hawai'i by Sections 5-1.3 and 13-13 of the County Charter, County of Hawai'i (2010), as amended, and said MITCHELL D. ROTH acknowledged said instrument to be the free act and deed of said County of Hawai'i.

Notary Public, State of Hawai'i
Printed Name: _____
My commission expires: _____

<u>NOTARY CERTIFICATION STATEMENT</u>	
Document Identification or Description:	
Doc. Date: _____ or <input type="checkbox"/> Undated at time of notarization.	
No. of Pages: _____ Jurisdiction: Third Circuit	
_____ Signature of Notary	_____ Date of Notarization and Certification Statement
_____ Printed Name of Notary	

EXHIBIT "A"

[Legal Description of the Protected Property]

EXHIBIT "B"

[Map of the Protected Property]

EXHIBIT "C"

[Baseline Documentation Report]

Hāloa ‘Āina FOREST STEWARDSHIP MANAGEMENT PLAN



PO Box 250
Pa‘auilo, HI 96776-0250
Tel +1 808 776 9900

Responsible Forester:

Aviva Gottesman, M.S.
Aviva_gottesman@forestsolutionsinc.com
+1 808 640 7118
+1 808 319 2377

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1. CLIENT AND PROPERTY INFORMATION

1.1. Client

Landowner Name: Haloa Aina L.L.C
Wade Lee

Address: 45-574 Plumeria St.
Honokaa, HI 96727

Email: WadeLee@haloaaina.com

Phone | Fax: +1 808 896-6307

TMK number: (3) 7-9-01-13, 14 and 15

State and County Zoning: Agriculture (20a)

Total property acreage: 2,780

Proposed stewardship area: 2,780

Elevational range: 4,600- 5,600

Slope: 2% - 25%

Streams, gulches: N/A

1.2. Consultant

Company: Forest Solutions, Inc.

Name: Aviva Gottesman

Title: Forester

Address: P.O. Box 250
Pa‘auilo, HI 96776

Email: aviva_gottesman@forestsolutionsinc.com

Phone: +1-802-291-2284, +1-808-640-7118

2. Forest Stewardship Plan Signature Page

Professional Resource Consultant Certification:

I have prepared (or revised) this Forest Stewardship Plan. Resource professionals have been consulted and/or provided input as appropriate during the preparation of this plan.

Prepared by: Forest Solutions, Inc.

Professional Resource Consultant's Signature/Date: Aviva Gottesman 08/03/2021

Professional Resource Consultant's Name: Aviva Gottesman

Applicant Certification:

I have reviewed this Forest Stewardship Plan and hereby certify that I concur with the recommendations contained within. I agree that resource management activities implemented on the lands described shall be done so in a manner consistent with the practices recommended herein.

Prepared for: Hāloa 'Āina

Applicant's Signature/Date: Wade Lee 08/03/2021

Applicant's Name: Hāloa 'Āina

State Forester's Approval:

This plan meets the criteria established for Forest Stewardship Plans by Hawaii's Forest Stewardship Advisory Committee. The practices recommended in the plan are eligible for funding according to state of Hawai'i Forest Stewardship Program guidelines and administrative rules.

Approved by: [Signature]

State Forester's Signature/ Date: Aug 6, 2021

State Forester's Name: David Smith

Forest Stewardship Advisory Committee

Approved by: Tanya Rubenstein

Committee Signature/Date: February 11, 2021

Printed Name: Tanya Rubenstein

3. Executive Summary

The forest management plan (FMP) contemplates the maintenance and improvement of 2,780 acres of native forest on the leeward slopes of Mauna Loa, near Kealahou, South Kona, Hawaii. This forest is located on three neighboring TMK parcels under a single ownership.

The scope of this FMP spans ten (10) years from date of initial implementation, and strives to protect, to improve and to enrich the native forest that exists on the property. Implementation of this plan will reduce factors deleterious to forest health in the medium to long-term and will promote native forest habitat across the property.

Serious threats to this forest include wildfire, invasive species, pests and disease, and feral animals (i.e. ungulates); however, it is the intent of this plan to prevent these threats from occurring and to ameliorate future unpredictable impacts by encouraging a diverse, stable, native ecosystem.

The long-term goals of this management plan are as follows:

- 1. To protect and conserve forest resources through threat reduction.**
- 2. To restore, remediate, and regenerate native forest and to preserve wildlife habitat.**
- 3. To commercially produce timber and non-timber forest products, specifically sandalwood oil.**
- 4. To increase social benefits in the local community and promote access to native forest.**

These goals will be sustained over the next 10 years through the following objectives:

- **Objective:** Threat reduction
- **Objective:** Achieve and maintain 80% forest land
- **Objective:** Increase property access for recreation and education

The main activities needed to accomplish the objectives set forth above include:

- Year 1 - 2: planting in burned area, brush management to remove invasive species
- Years 3-5: Construction of additional fuel break on eastern side of property and animal grazed fuel break
- Years 6-10: Additional planting projects
- Continuous:
 - Manage for invasive weeds (brush management)
 - Increase canopy cover through native species enrichment planting projects
 - Fuel break maintenance semi-annually
 - Integrated pest management (IPM)
 - Increase access to property for the public and community members
 - Increase collaboration and resource sharing with other organizations in the conservation field

4. Introduction

4.1. Project background

This management plan lays out a land management strategy for a 10 year period (2021-2031). The purpose of this multi-resource forest management plan is to provide a description of the forest stands on the property, explain land management goals and objectives, and describe the necessary actions required to meet those objectives. The Hāloa ʻĀina (HA) property is an environmentally important resource that will be protected in perpetuity through a conservation easement as a part of the Hawaii Forest Legacy Program (FLP). This document fulfills the requirement set forth by the conservation easement to be a detailed, functional management plan describing property-level goals, objectives, and actions for the following 10 years.

HA is a tropical dry forest, the rarest forest type in Hawaii. Recognized by international conservation groups and documented in numerous scientific journals and textbooks, tropical dry forests are the most threatened and endangered forest ecosystems in the world. Over 90% of Hawaii's dry forests have already been lost to forest conversion. This unique forest contains economically important sandalwood or ʻiliahi (*Santalum paniculatum*), world renowned for its scented heartwood, and habitat for endangered wildlife.

The robust Hawaiian sandalwood trade initially collapsed in the 1850s due to overharvesting and forest clearing. The once prolific sandalwood is still difficult to find in Hawaii's forests, but HA's populations are growing and flourishing due to removal of cattle and feral ungulates as well as sustainable management.

In the early 2000's, the forest was significantly impacted and lacking native tree regeneration due to 150 years of overgrazing by sheep and cattle. Both feral and domestic animals had a significant impact on the forest regeneration by grazing new sprouts and destroying out planted seedlings. In 2010, landowners began fencing out feral ungulates and increased hunting to control ungulate populations.

Around the same time (2010), forest management practices involved the harvest of senescent (dead and dying) sandalwood trees which resulted in plentiful, widespread regeneration from root sprouts. This is because sandalwood is a hemi-parasitic plant with an extensive and complex root system. The species is capable of regeneration through root-suckering. When a tree is cut the root-system responds by releasing abundant stems of new growth in a circular pattern surrounding the original stump. Because of the hemi-parasitic nature of the species, sandalwood must attach to the roots of a host tree species to obtain water and nutrient resources. Sandalwood survival is dependent on the presence of other species, therefore the planting that occurs at HA includes diverse species that are suitable hosts for the sandalwood.

Due to the combination of ungulate control and increased regeneration from root sprouts, the forest is growing into a potentially secure resource. Within the next 40-60 years, the newly regenerating sandalwood will reach maturity and the forest products (e.g. sandalwood oil) will continue to be available. Forest management strategies are contributing to the long-term sustainability of a multi-species, native forest by providing funding for operations and resource management costs.

4.2. Forest Management Goals & Objectives

The forest management priorities of this management plan focus on land restoration, remediation, and threat reduction. These program activities will thus allow for the specific long-term goals:

1. **To protect and conserve forest resources through threat reduction.**
2. **To restore, remediate, and regenerate native forest and to preserve wildlife habitat.**
3. **To commercially produce timber and non-timber forest products, specifically sandalwood oil.**
4. **To increase social benefits in the local community and promote access to native forest.**

To achieve these goals the management plan will outline the following objectives and management actions.

1. **Objective:** Threat reduction
 - a. Wildfire prevention
 - i. *Fuel break construction*
 - ii. *Fuel break maintenance*
 - b. Ungulate control
 - i. *Fencing*
 - ii. *Hunting*
 - c. Control of invasive exotic species
 - i. *Manual removal*
2. **Objective:** Achieve and maintain 80% native forest land
 - a. Reforestation
 - i. *Provision of establishment sites*
 - ii. *Enrichment plantings*
3. **Objective:** Increase property access for recreation and education
 - a. Public groups and county events
 - b. Private groups
 - c. Regional collaboration



Figure 1. Landscape views from Hāloa 'Āina . Photo source: Wade Lee, 2020.

5. Site description

The Hāloa ‘Āina property is 2,780 acres in Kealahou, North Kona District, Hawaii County, Hawaii. The property is of level to rolling topography that gently up-slopes from the western boundary at 4,600 feet above sea level to the eastern boundary at 5,600 feet above sea level along the slopes of Mauna Loa. The property is on the boundary of NRCS designated MLRA (Major Land Resource Areas) 161A and 161B¹. 92% is 161B, “*Semiarid and Subhumid Organic Soils on Lava Flows*” and 8% of the property is 161A, “*Lava Flows and Rock Outcrops*.” The average annual temperature is 56.6 degrees Fahrenheit, colder months being December-April, warmer months being May-November. The average annual rainfall on the property is 25.88 inches (656.8 mm). Rainfall is sparse though occurs consistently throughout the year ranging from 1.77- 2.93 inches per month.

Recognized by international conservation groups and documented in numerous scientific journals and textbooks, tropical dry forests are the most threatened and endangered forest ecosystems in the world. Over 90% of Hawaii's dry forests have already been lost to forest conversion. The remaining dry forests of Hawaii Island are scattered in a patchwork across the Kona region. HA's intact dry forest is uniquely linked to a larger dry forest landscape that provides 40,000 acres of contiguous habitat necessary for 25% of Hawaii's native species that are only found in dry forests (FLP 2018, USFS²).

The property is categorized as Agriculture (20a) and is currently utilized for sustainable forestry with ‘iliahi and koa trees being the primary products. The ‘iliahi and koa root sprouts and regeneration from seed regeneration are mostly due to ungulate removal and are a natural response of previous harvesting. Various native species are being out planted by landowners including 11,000 seedlings planted on neighboring Kamehameha Schools (KS) land, and an additional 4,000 to neighboring landowners for restoration projects last year alone. Previously, the area was utilized primarily for pasture by the former owners who had removed forest.

5.1. Location

The property is 2,780 acres in Kealahou, North Kona District, Hawaii County, Hawaii. The property lays approximately 3.5 miles east of the coast along the western slopes of Mauna Loa, about 10 miles south of Kailua-Kona on the mauka boundary of the North and South Kona administrative districts. The property is located in an agricultural subdivision identified as “Hokukano Ranch” that consists of 25 lots controlled by an owners’ association. The property can be reached by taking Mamalahoa Highway south from Kailua-Kona (HI-11/Hawaii Belt Rd) to Pu’u Lehua Drive, located at 81-6580 Mamalahoa Highway. The property is located at the end of the road, about 8 miles from the highway through 3 locked gates.

¹ United States Department of Agriculture, Natural Resources Conservation Service. 2006. *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin*. U.S. Department of Agriculture Handbook 296

² Forest Legacy Plan for Hāloa ‘Āina, USFS, 2018.

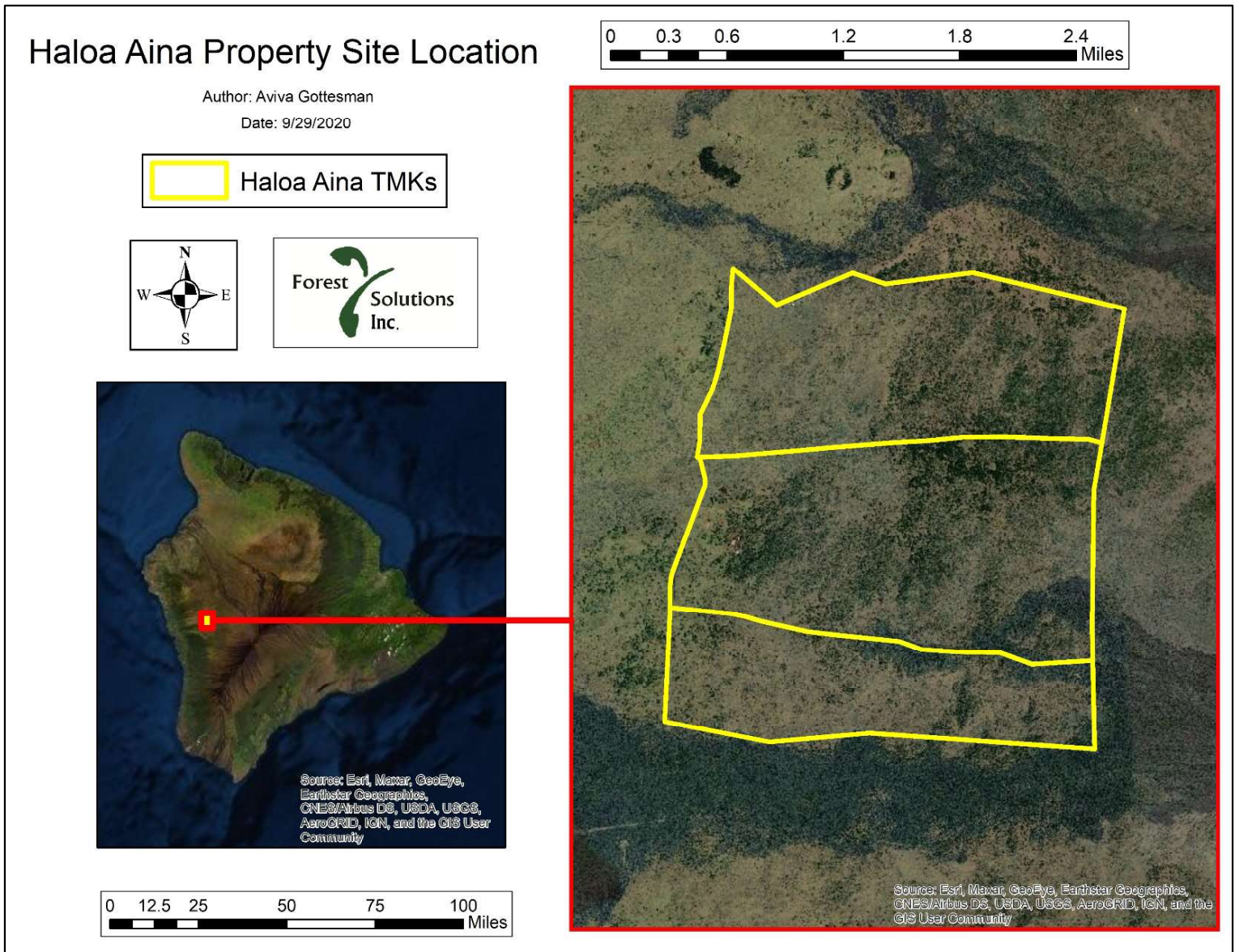


Figure 2. Property location of Hāloa ‘Āina, Island of Hawaii, HI.

5.2. Roads and Access

Interior roadways within the property are unpaved with rocky and/or dirt surfaces and require a 4x4 vehicle. There is an interior roadway that is located along the perimeter of the middle TMK. All boundaries are accompanied by a roadway, except the southern boundary. There are small roads within the property as well, that require either 4x4 or ATV access. Currently there are around 20 miles of 4x4 roads on the property.

5.3. Infrastructure

Water is currently obtained from a catchment system utilizing a 10,000 square feet corrugated metal roof that drains into a 30,000 gallon wood frame, aboveground, water holding tank. The water is delivered by a pump system into aboveground galvanized water pipes to other 4,000 and 6,000 gallon wood frame, aboveground, holding tanks on the subject property. In addition, there are three lined water reservoirs located on the subject site. They are located by the cabin, below the cabin to the south, and by the processing area. The catchment water is utilized for processing forest products (sandalwood oil) and domestic purposes to the residential dwellings located on the site.

Power for the property is provided by a solar/photo voltaic system with 23 solar panels and an aboveground propane storage tank. Sewage disposal is via cesspool system.



Figure 3. Main cabin at HA. Photo source: Forest Solutions, 2020.

Existing improvements include two, one-story, wood frame residential cabins. The main cabin contains three bedrooms, two bathrooms, and a living area with a lanai constructed in 1954. The one bedroom, one bathroom caretaker's cabin was built in 1972.

5.4. Strategic significance of location

The following is an excerpt from the Forest Legacy Program (FLP) proposal to the USDA Forest Service, written in 2018 to support acquisition of a conservation easement on the property through the FLP.

Hāloa 'Āina (HA) connects to the forests and volcanic landscape of Hawaii Volcanoes National Park through other protected lands, comprising over 360,000 acres of wilderness with 1.2 million visitors annually. HA combined with the other federal, non-profit, and state reserves in Kona totals over 400,000 acres, which is internationally and nationally significant on an island of 2.6 million acres.

The adjacent 3 landholdings, Kealakekua Reserve (FLP project), Kaawaloa Forest (FLP project), and Kamehameha Schools (KS-charitable trust) are committed to conservation of their forests. The Conservation Easement (CE) at HA will connect these areas into more than 40,000 contiguous acres of protected and active working forests; one of the largest such areas in the State. East of HA are lands owned by KS, a native Hawaiian charitable trust. KS manages their land per their mission to improve the well-being of native Hawaiians. KS stewards their natural resources by balancing education, cultural, economic, environmental, and community benefit for the people of Hawaii in perpetuity. HA has a 5 year contract to manage KS lands for sustainable sandalwood production.

HA and KS comprise the largest area in the state (30,000 acres) of actively managed Hawaiian sandalwood habitat. Through attentive management (fencing, tree planting, and enhancing natural regeneration) and

engagement of neighbors, HA is the center of this region's sandalwood production, achieving conservation goals and economic use of one of the most highly valued forest products in the world.

At the International Union for Conservation of Nature conference held in Hawaii in 2016, the Governor committed to protecting 30% of the State's highest priority watersheds by 2030 in his 30x30 Watershed Forests initiative. HA is a priority watershed and a CE would contribute .5% to meeting these watershed goals as well as protection of 10% of the South Kona Area of Emphasis (AOE). The South Kona AOE is a landscape-scale conservation initiative started by a group of non-profit, federal, and state managers over 20 years ago with the goal to protect the diverse native forest on Ag-zoned lands in the region from clearing. This area is a native dominated forest held almost entirely by private owners in a region facing mounting development pressures and agricultural conversion.

Across Hawaii, watersheds are protected and enhanced through voluntary public-private partnerships. HA has partnered with the Three Mountain Alliance (TMA) Watershed Partnership on projects, including dry forest restoration on 9,000 acres of KS lands adjacent to HA. The TMA is responsible for management across Mauna Loa, Mauna Kea, and Kilauea mountains, totaling over 1.1 million acres.



Figure 4. Planting crew at HA. Photo source: Wade Lee

Haloa Aina Forest Legacy Project

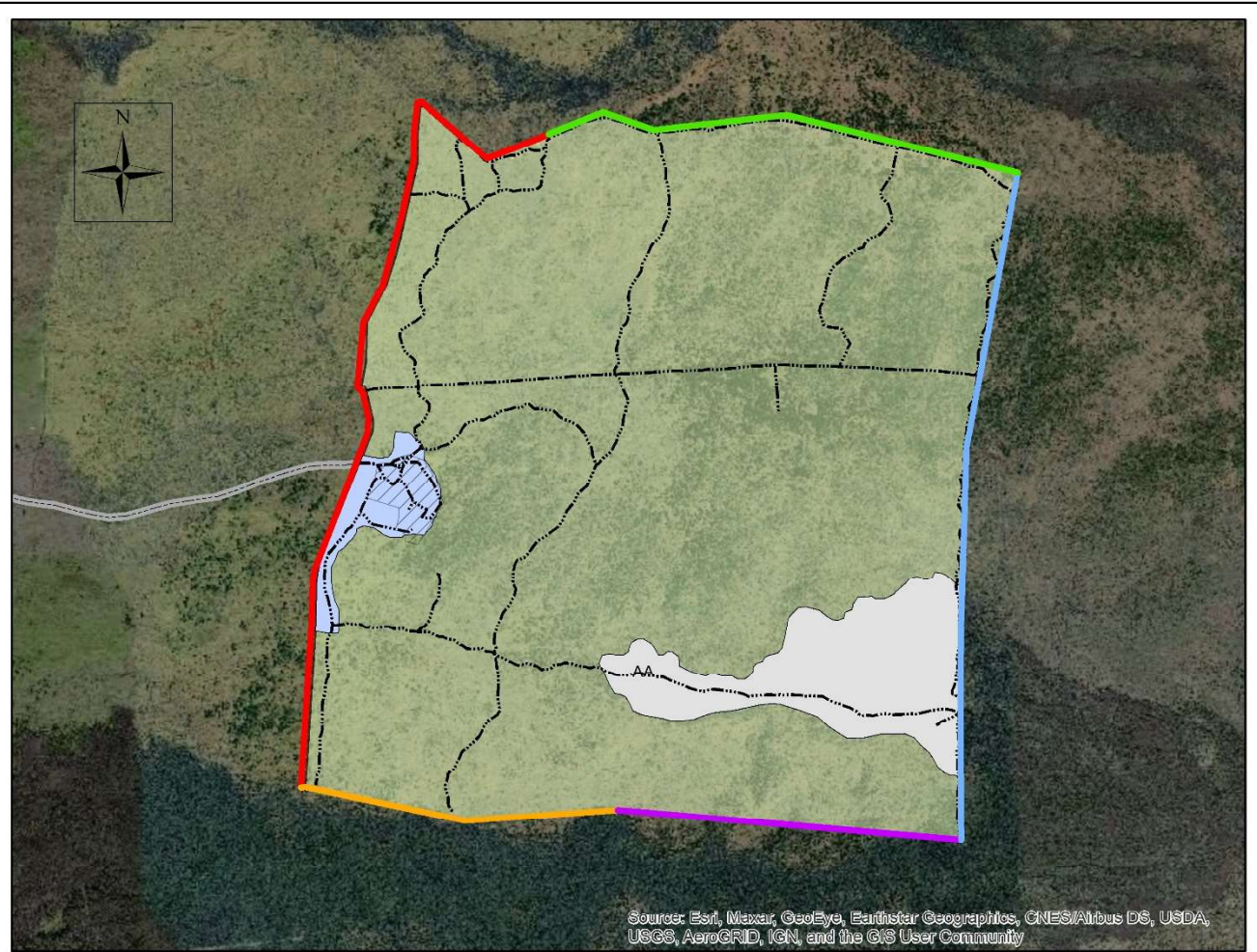
Legend

- | | | |
|--|---|--|
|  Haloa Aina FLP Project (2,780 acres) |  TMA Dry Forest Restoration Project |  Major Roads |
|  Existing FLP CEs |  KS Lands Managed for Forest Conservation |  Development/Housing Lots or Subdivisions |
|  State Reserves |  Hawaii Islands Land Trust CEs | Hokukano Ranch Subdivision |
|  Federally Protected Lands |  FLAON # 1 Priority Landscape (Native Forest in Ag-Zone) |  Remaining Properties for Sale |
|  Community Forest |  Cities and Towns |  Properties Sold in Last 5 Years |



Created by DLNR DOFAW
Date: November 15, 2018

Figure 5. Developed parcels and forest land surrounding HA shows the strategic importance of the property for conservation purposes.



Legend

- 4 x 4 Roads
- Access Road
- Processing Facility
- A'a flow
- Infrastructure
- Property Boundary

Boundaries and fences

- HA 4' Hogwire + 1str. Barb: 2.9 mi
- KHR 4 str. Barb: 1.1 mi
- KHR 4' Hogwire: 1.2 mi
- KS Lupea 6' Hogwire: 1.6 mi
- KS Old Cattle Rock Wall: 2.3 mi

Haloa Aina Property Description

Author: Aviva Gottesman

Date: 1/26/2021

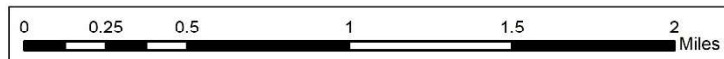


Figure 6. Access routes, roads, fences, and infrastructure zone at HA.

5.5. Site History

5.5.1. Land use history

The Greenwell family received a grant in 1876 for 8,027 acres, including ownership of the HA parcels (OHA, Kipuka³). Cattle operations began when Henry Nicholas Greenwell purchased a herd of cattle and entered the dairy business. Shortly after Greenwell's death in 1891, management of the ranch was passed on to his son, William Henry. By 1910, butter operations ceased and the raising of beef cattle began in earnest (Henke, 1929). Sometime after 1927, the ranching business was divided into three parts (Wikipedia, 2014). These became the Frank Greenwell Ranch, William Henry Greenwell Ranch, and Arthur Greenwell Ranch (Henke, 1929). The W.H. Greenwell holding (11,000 acres) was purchased by the Pace family in 1986 and renamed Hokukano Ranch. The current owners repurchased the 2,780 acre property to continue family stewardship of this forest in 2010.

The landscape at HA has been shaped by a history of natural disturbances such as wildfires and by anthropogenic disturbances due to historical land use practices. Grazing by domestic livestock and feral animals has degraded native forest vegetation and limited natural regeneration. Harvesting of koa (*Acacia koa*), 'ōhi'a (*Metrosideros polymorpha*), 'iliahi and other forest products has removed native vegetation and opened the forest to invasive plants. Non-native pasture grasses and shrubs have replaced native understory species over a wide area. Although these events have reduced native biodiversity, the forest canopy remains dominated by native species.

Though sandalwood forests in Hawaii are declining due to ranching, HA is actively managing their forest stimulating root sprouting from dying trees, fencing, and actively removing ungulates.

Sandalwood is a national and internationally significant forest product and HA uses innovative harvesting techniques that yield the most abundant regeneration in the state - a regional model that supports maintaining and expanding native forests instead of clearing for other uses. HA's current owners are descendants of the native Hawaiian family that stewarded this area before the overthrow of the Hawaiian Kingdom.

5.5.2. Historical or cultural resources

In early Hawaii, Hawaiians managed land gifted by the King, but did not own land. The HA family lost their ancestral land in the 1850's when private land tenure began. When the two Lee brothers (HA) heard the land was for sale in 2010, they purchased it to steward the forest once again.

The property is in the Ahupua'a of Honalo, Mā'ihī 1-2, in the Moku of Kona and Mokupuni of Hawai'i. This area was part of the "crown lands", once property of the Hawaiian monarchy, and of the government lands of the Kingdom of Hawai'i. It was Kingdom of Hawai'i government land in 1848, and therefore was part of the land that was "ceded" to the United States. There have been several archeological studies in the region, however no surveys of the HA property have been completed. An archeological survey was performed on the adjacent KS property of Lupea for fence line construction, which did not find any historic properties within the project's Area of Potential Effect. Other studies in the region include the Archaeological Study for the Kealakekua Master Plan (Hammatt et al. 1991), a reconnaissance-level study that identified a number of historic properties (including a Hawaiian trail and Hawaiian shrine complexes) at approximately 5,600 ft. elevation near the intersection of Keauhou 2nd and Kealakekua ahupua'a in the general vicinity of Kīpuka Māmane. This study indicates trails and sites are found in the region and may be present on the HA property.

The KS study summarizes the types of archeological sites that may be present in upland region (Table 1).

³ Kipukadatabase.com/kipuka

Table 1. “Keauhou Archaeological Site Types as Might be Expected in the Uplands of Keauhou 2nd (after Dougherty and Moniz-Nakamura 2006:68).” Source: Archaeological Assessment for the North Kona Protective Fencing Project, Keauhou 2nd, Hawai‘i

Site Type	Function
C-shapes, overhang and rock shelters	Habitation
Caves	Temporary habitation, water collection, burial interment
Ponds/ water holes	Resource procurement
<i>Ahu</i>	Markers
Trails	Transportation
Excavated pits	Resource procurement
Shrines/ <i>heiau</i>	Ceremonial
Ranch structures	Habitation
Walls	Boundary delineation
Paddocks	Animal pens
Enclosures	Habitation, Animal pens
Temporary (historic) camps	Habitation
Water tanks	Resource management
Irrigation systems	Resource management
Logging/ milling stations	Resource Collection/ processing
Roads/ trails	Transportation

Table 2. Historical sites at or near HA that are not included in the Lupea Survey.

Place Name	Feature Type
Kipuka Major	Island of older lava
Kipuka Māmane	
Waiio Kipuka	
Maka Ulaula	
Nahuina	
Nakawaa	
Poopaaelua	
Kahelepo House	
Kanakamilae	

Under HRS Chapter 6E, an historic property is an object, district, structure, site, or building that is 50 years or older. Historic properties that meet the significance criteria and retain historic integrity may be eligible for, or listed to, the Hawai‘i or National Register of Historic Places.

The property does not have any historic properties listed on the Hawaii or National Register of Historic Places. The landowner will follow all laws related to historic preservation for private property owners. This requires review and consultation by the State Historic Preservation Division if a known historic property listed in the Hawaii or National Register of Historic Places will be affected by planned management activities (HRS 6E-10). If burial sites are encountered, all work will stop and SHPD and County Police Department will be contacted immediately.

Aside from legal responsibilities, if the landowner observes potential historic sites, they intend to avoid disturbing those areas.

Projects with the potential to impact historic properties that use state and/or federal funding for project implementation or require state and/or county permits have different requirements and require consultation and review by the State Historic Preservation Division. Historic review and consultation for these types of projects is the responsibility of the lead state, county, or federal agency.

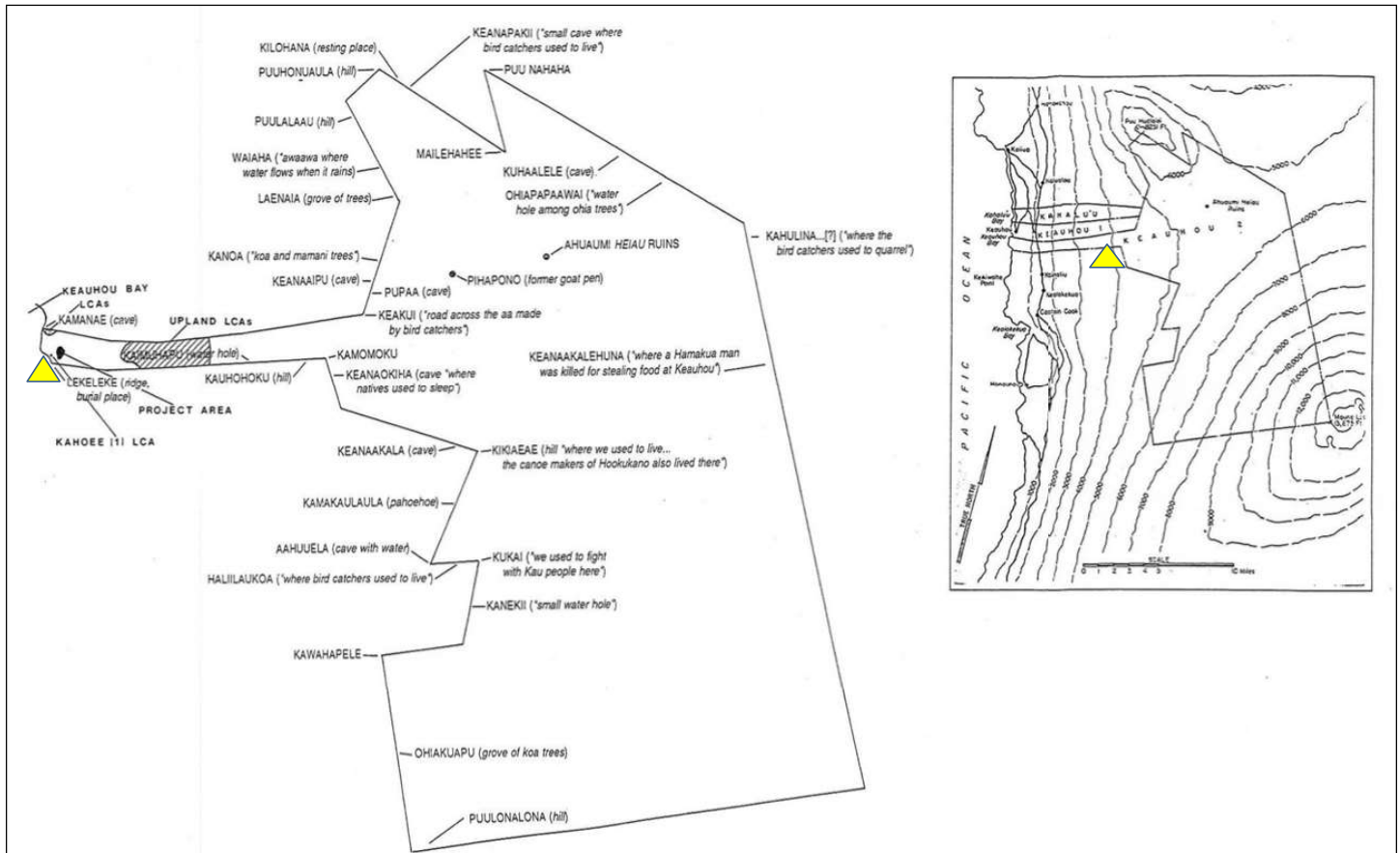


Figure 7. “Keauhou 2 place names (outline traced from U.S.G.S. map); location of place names from Boundary Commission Testimony”, Source: Archaeological Assessment for the North Kona Protective Fencing Project, Keauhou 2nd, Hawai‘i. Yellow triangle indicates general location of HA, neighboring the Lupea fence project area.

5.5.3. Economic value

Hawaii is the only U.S. state that grows and exports sandalwood. Sandalwood has local, national, and international export market, particularly to Asia, where it is prized for religious, therapeutic, and medicinal uses, including carving, incense, and essential oils. Hawaiian sandalwood oil is recognized as one of the top 3 in the world for quality. It is sold to the US essential oil market where demand is increasing, and resources are scarce (average price of \$85/5ml). High quality trees are valued at \$10,000-50,000/tree and used in 34 different products (FLP Proposal, USFS, 2018).

With a goal of creating a sustainable industry, HA's onsite sandalwood oil processing facility (the only one in the US) is USDA Certified Organic (Section 4.10.1) and provides an economic benefit for nearby landowners growing sandalwood. HA has been working alongside KS to actively manage their neighboring forest for sandalwood, promoting mutually beneficial growth for both neighbors, and for the forest, through the collaboration.

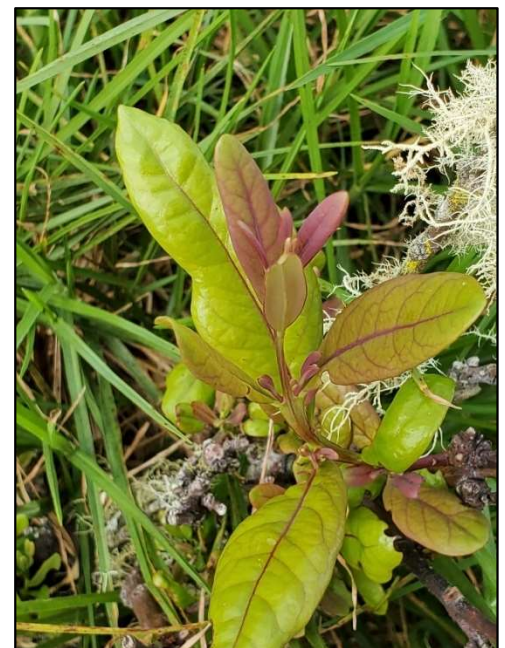


Figure 8. Sandalwood regeneration at HA

Native Hawaiians historically used sandalwood oil for wellness and medicinal purposes, and HA promotes these traditional practices. HA sells 90% of their oil or 1100 kilograms annually to Young Living Essential Oils, who is also committed to using sandalwood oil to improve health and wellness. Financial information about Young Living and HA is not available for reporting due to a Non-Disclosure Agreement between the two parties.



Figure 9. Young Living event hosted at HA.

5.5.3.1. Sandalwood oil extraction process

The heartwood of the sandalwood tree contains the highest concentration of oil and is the principal plant part used in the extraction process. HA processes the oil using a steam distillation extraction method. According to the HA owned oil company, Hawaii Sandalwood, the process for sandalwood oil cultivation is as follows:

Phase 1. Seeds are planted in greenhouse. After six months, a host plant is introduced to the sapling to assist in its growth. The full seed-to-sapling process takes around one year.

Phase 2. After about a year, the sandalwood sapling and host are planted into the ground.

Phase 3. Sapling grows into full-grown tree over coming decades. Due to the lengthy growth cycle, we have not yet harvested a tree of our own planting. Average age of harvested trees is 45 years old, when less than 50% of their canopy remains.

Phase 4. Trees that meet the criteria of a dead or dying tree are harvested and cut into small chunks, ready for chipping.

Phase 5. Wood is run through chipper and prepared for distilling process.

Phase 6. Chips are placed into distillation vats and run through lengthy and technical distillation process.

After distillation, both the Royal Hawaiian Sandalwood Oil and Hydrosol are collected and go through a series of tests to ensure that they meet quality standards (<http://www.hawaiisandalwood.com/>).

5.5.4. Infrastructures and aesthetic value

There are no official public scenic lookouts or known historic trails on the property; however, the property is very scenic due to its undeveloped nature. HA, and nearby high-elevation properties, provide views of Hualālai, Mauna Kea, and Mauna Loa summits. Private groups or individuals may enjoy the expansive beauty through

hunting, bird watching, horseback riding, ATV riding, and hiking. ATV use is limited to existing 4 x 4 roads, while the other activities listed above are limited to existing roads and forest trails.



Figure 10. Scenic views from HA, photo source: FSI, 2020.

5.5.5. Recreation and education

Hāloa ‘Āina currently hosts an array of diverse events throughout the year for both the local community and for private tours of visitors. The goal of allowing access onto the property is to educate people about the native Hawaiian forest and how it should be conserved. Other aspects of these visits include teaching people how sandalwood is processed into oil and the cultural significance of this resource.

HA is marketed online as, “a native forestry and education organization committed to economic prosperity and environmental responsibility being guided by cultural value for a more sustainable Hawaii.” The private tours they provide include a walk through the native Hawaiian forest, a visit to the oil extraction facility and greenhouse, and lunch with a view of the property (<http://haloaaina.com/tours/>). “Cultural, educational and youth retreats organized for work, education and/or research are currently coordinated to perpetuate and sustain the type of cultural philosophies that were once practiced by the Hawaiians who previously inhabited this area.”

All groups that visit follow a set of rules to help protect the forest (rules are detailed in Section 5.1 of this plan). Official educational and access events organized and led by the County of Hawaii with the assistance of the Hawaiian Islands Land Trust (HILT) will occur at a minimum of four times a year (quarterly) and will follow the requirements of the conservation easement (details described in management section of this plan).

5.6. Flora

5.6.1. Forest type

The current forest structure has been shaped by the land use history of harvest activities and grazing. The majority of the property (73% of the property acreage) is characterized as open koa (*Acacia koa*)-māmane (*Sophora chrysophylla*) forest. This cover type is the result of a long history of grazing cattle. The overstory is very sparse, with occasional koa and ‘iliahi reaching overstory size. The sub-canopy contains naio (*Myoporum sandwicense*), māmane, and ‘a‘ali‘i (*Dodonaea viscosa*) with a grassy groundcover over a‘a. The other large cover type on the property is characterized as alien grassland (23% of the property acreage). The grassland is a mix of kikuyu (*Pennisetum clandestinum*), meadow rice (*Ehrharta stipoides*) and other pasture weeds, and contains native species such as: ‘a‘ali‘i, naio, māmane, ‘iliahi, ‘ōhi‘a (*Metrosideros polymorpha*), pūkiawe (*Leptecophylla tameiameia*), and koa. There are also small components of open-‘ōhi‘a forest with native shrubs over younger a‘a flows on the property (4% of the property acreage).

Based on these cover types and data collected during the 2020 forest inventory, 77% of the of the property acreage is characterized as open forest; however, the forest inventory indicated that areas categorized as “alien grassland are not without tree cover. Within the grassland, there are native tree species scattered around and many young trees regenerating. Therefore, the property has already achieved over 80% forest land, according to the definition from the Forest Legacy Program (FLP) Assessment of Needs (AON) for the State of Hawaii⁴. The AON definition for forest land is referencing the definition from Oswalt et al. 2012⁵ which is as follows:

Forest land is defined as land at least 1 acre in size with at least 10 percent cover by live trees including land that formerly had tree cover that is regenerated. This includes all areas recently having such conditions and currently regenerating or capable of attaining conditions. All HA roads and trails are less than 120 feet wide, therefore are classified as forest. Forest land does not include land with agriculture or urban land use. Much of the alien grassland would fall under land “currently regenerating or capable of attaining conditions” because there is abundant regeneration of māmane and ‘iliahi in the “grassland” areas.

Table 3. Species found in 2020 Forest Inventory (list not comprehensive of all species on property).

Species	Scientific Name	Native/ Non-native	Frequency (%)	Average Percent Cover (%)
Hair grass	<i>Deschampsia nubigena</i>	Native	14%	2%
‘iliahi	<i>Santalum paniculatum</i>	Native	10%	< 2%
koa	<i>Acacia koa</i>	Native	10%	< 2%
māmane	<i>Sophora chrysophylla</i>	Native	10%	4%
iwa iwa	<i>Dryopteris decipiens</i>	Native	5%	< 2%
‘a‘ali‘i	<i>Dodonaea viscosa</i>	Native	5%	< 2%
pūkiawe	<i>Leptecophylla tameiameia</i>	Native	5%	6%
Pacific lovegrass	<i>Eragrostis atropioides</i>	Native	5%	5%
naio	<i>Myoporum sandwicense</i>	Native	5%	2%
kikuyu	<i>Pennisetum clandestinum</i>	Non-native	100%	53%
meadow rice	<i>Ehrharta stipoides</i>	Non-native	100%	19%
fireweed	<i>Senecio madagascariensis</i>	Non-native	62%	4%
mullein	<i>Verbascum thapsus</i>	Non-native	43%	3%

⁴ DLNR-Division of Forestry and Wildlife. *Forest Legacy: Amended Assessment of Needs- State of Hawaii*. December 2018. https://dlnr.hawaii.gov/forestry/files/2018/12/Hawaii-Forest-Legacy-Assessment-of-Needs_FINAL.pdf

⁵ Oswalt, Sonja N., et al. "Forest Resources of the United States, 2012: a technical document supporting the Forest Service 2010 update of the RPA Assessment." Gen. Tech. Rep. WO-91. Washington, DC: US Department of Agriculture, Forest Service, Washington Office. 218 p. 91 (2014).

foxtail	<i>Alopecurus L.</i>	Non-native	33%	10%
African dropseed	<i>Sporobulus africanus</i>	Non-native	29%	3%
Sprawling bluebell	<i>Wahlenbergia gracilis</i>	Non-native	29%	2%
common clover	<i>Trifolium Spp.</i>	Non-native	29%	2%
cape ivy	<i>Delairea odorata</i>	Non-native	24%	2%
violet night		Non-native	19%	< 2%
Spanish needle	<i>Bidens pilosa</i>	Non-native	14%	< 2%
sweet vernal	<i>Anthoxanthum odoratum</i>	Non-native	14%	10%
Yorkshire fog	<i>Holcus lanatus</i>	Non-native	14%	3%
wireweed	<i>Sida acuta</i>	Non-native	10%	< 2%
horseweed	<i>Conyza bonariensis</i>	Non-native	10%	2%
Molasses grass	<i>Melinis minutiflora</i>	Non-native	5%	< 2%
cranesbill geranium	<i>Geranium homeanum</i>	Non-native	5%	< 2%
Hart's-tongue fern	<i>Asplenium scolopendrium</i>	Non-native	5%	< 2%
fountain grass	<i>Pennisetum setaceum</i>	Non-native	5%	< 2%
Hairy cat's ear	<i>Hypochaeris radicata</i>	Non-native	5%	< 2%
bur clover	<i>Medicago polymorpha</i>	Non-native	5%	3%
fern		Unknown	5%	5%
bare ground			33%	37%

5.6.2. Forest structure: canopy and subcanopy

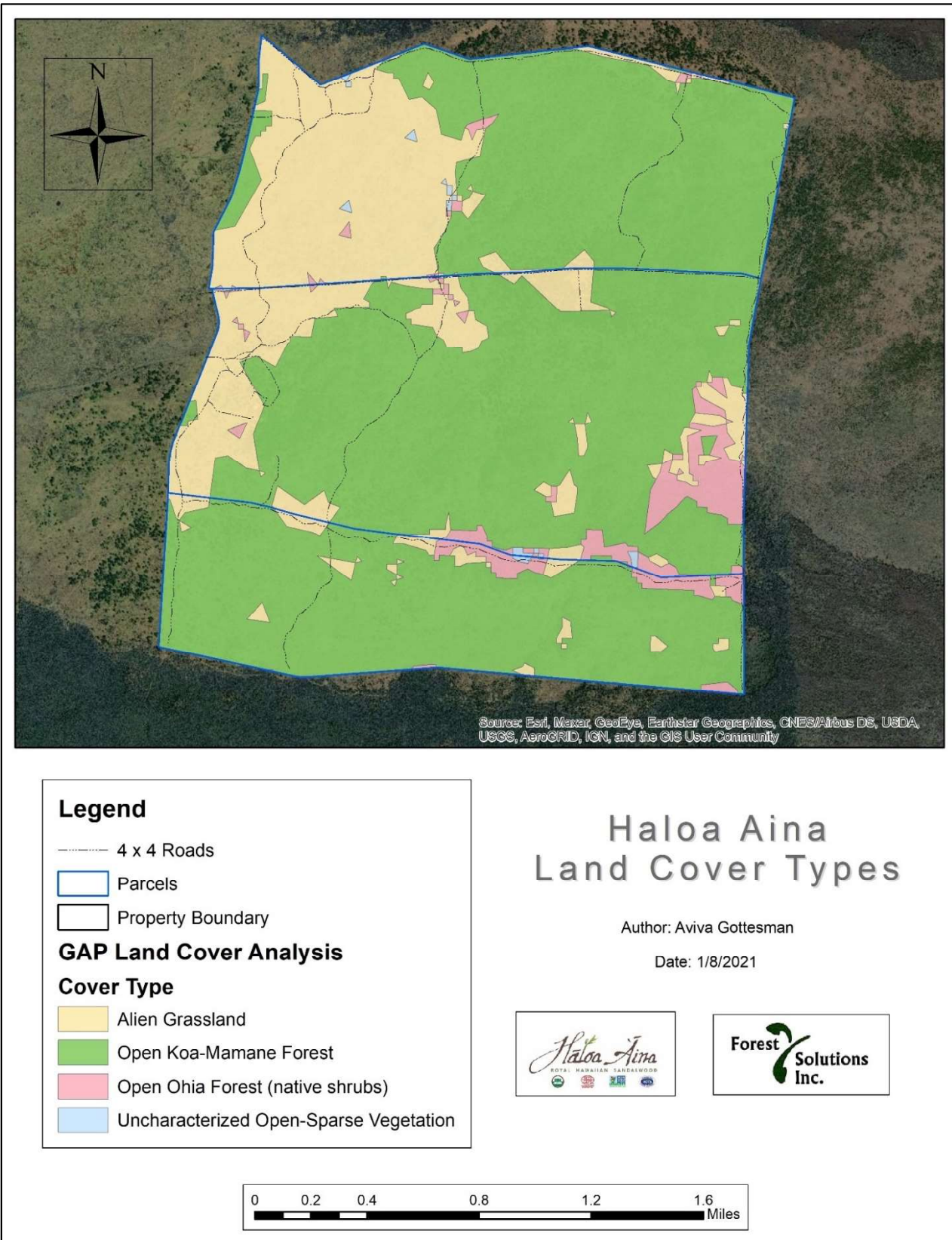
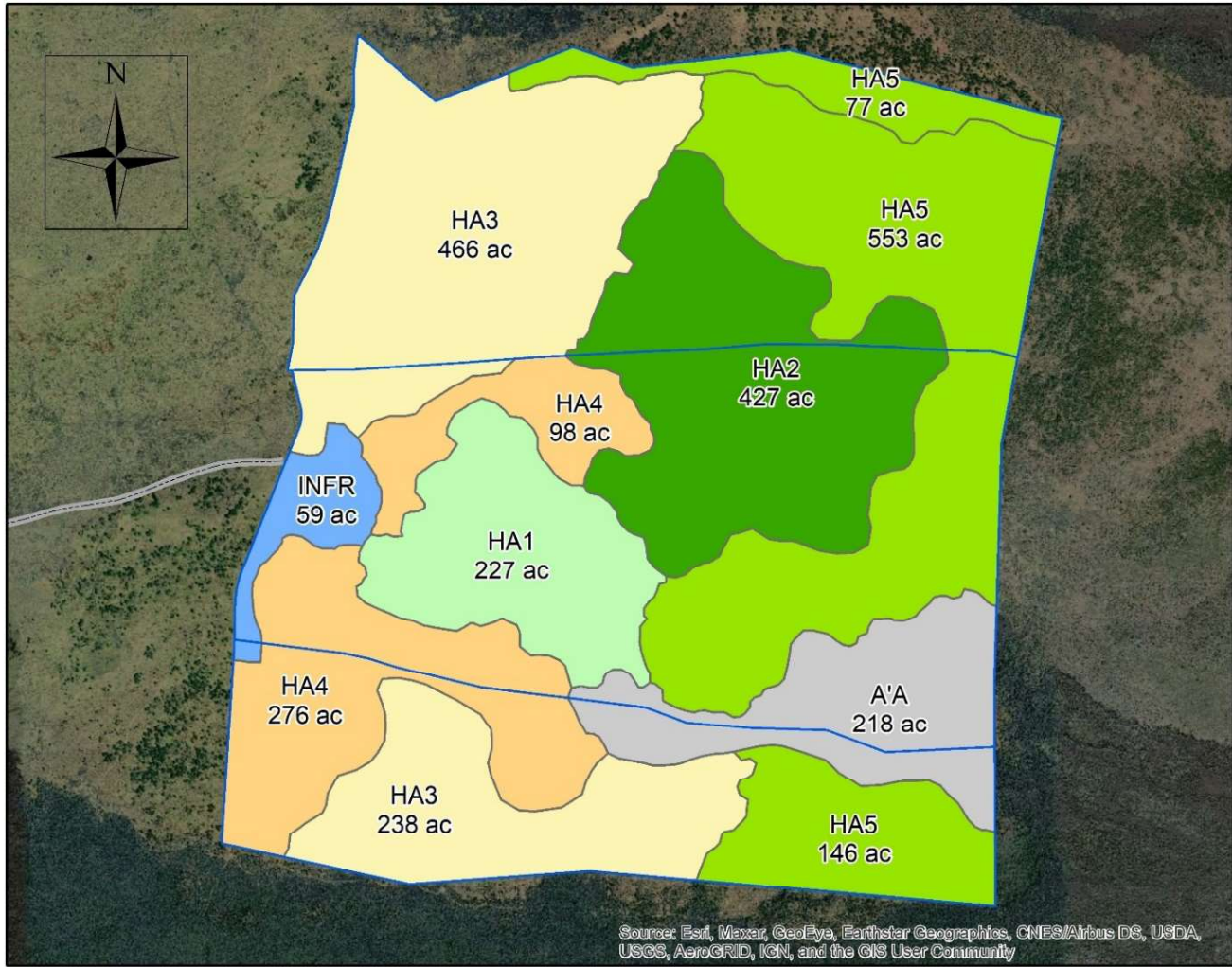


Figure 11. GAP land cover types show that the property is mostly open koa-māmane forest, with areas of alien grassland due to historic grazing and wildland fires. The open ‘ōhi‘a forest is located on/near a young a‘a flow.



Legend

- Access Road
- Property Boundary
- Parcels

Strata Definitions

- A'A: open ohia forest over a'a flow
- HA1: open forest with dense mamane component
- HA2: dense koa- mamane forest
- HA3: open grassland with native trees
- HA4: open grassland with logging history
- HA5: open forest, dense subcanopy of natives
- INFR: infrastructure and processing facility

Forest Stratification Haloa Aina

Author: Aviva Gottesman
Date: 1/8/2021

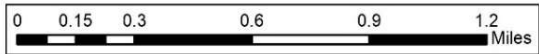


Figure 12. HA forest strata including the acreage and characteristic features of each strata featured in the legend.

Table 4. Description of the forest strata, former strata name, area, and defining characteristics.

Stratum Name	Area (ha)	Area (ac)	Stem density	Logging history	Characteristics
A'a	88	218	Low	None	Open forest over a'a flow, contains mostly ohia and pūkiawe
HA1	92	227	High	Low intensity	Dense sub-canopy, māmane, etc....
HA2	173	427	High	High intensity	Patchy understory with grassy regions and thicker regions
HA3	285	704	Low	Low intensity	Open grassland, occasional trees and shrubs
HA4	151	374	Low	High intensity	Open grassland, occasional trees and shrubs
HA5	283	699	Medium	Extensive logging	Open forest with dense regeneration, small trees, and various shrubs



Figure 13. Pictures depicting all of the various stratum, including the a'a flow.

5.6.3. Endangered flora

No endangered flora has been found on the property at this time.

5.6.4. Forest health

5.6.4.1. Timber resources

An inventory of the forest on the property was completed in 2020. Conclusions from the inventory are summarized below. **For the complete forest inventory, see Appendix A.**

Summed across the strata, the property supports 226 m³ of ‘iliahi, of which 77 m³ is whole tree heartwood. This relates to over 17,000 kg of stem heartwood and almost 112,000 kg of root heartwood. There is an average of 4 ‘iliahi per acre for a total of over 12,000 trees (> 5 cm). Widespread regeneration due to past harvesting and removal of ungulates has resulted in plentiful regeneration with an average of 47 regenerating stems per acre and 135,700 regenerating stems across the property. The total inventory analysis acreage is 2,649 acres or 1,072 hectares. A total of 131 acres were not included in the inventory due to a boundary issue on the northern border (71 ac.) and to exclude the infrastructure and processing facility area (60 ac.). The stewardship area of this plan is the total property acreage of 2,780 acres.

Table 5. Forest inventory summary table from 2020 Forest Inventory Report of Hāloa ‘Āina

‘Iliahi results summarized at the property level				
	Average Volume (m³ ac⁻¹)	(m³ ha⁻¹)	Total Volume (m³)	SE_{80%} (%)
Whole tree (outer bark)	0.08	0.19	226	22%
Whole tree heartwood	0.03	0.07	77	28%
	Average Mass (kg ac⁻¹)	(kg ha⁻¹)	Total Mass (kg)	
Stem heartwood	6	15	17,029	31%
Root heartwood	40	99	111,916	23%
	Average Stems (ac⁻¹)	(ha⁻¹)	Total stems	
‘Iliahi trees	4	10	12,090	20%
‘Iliahi regeneration	47	117	135,718	16%

In comparison to neighboring forests, Hāloa ‘Āina contains above average ‘iliahi resources even though the population appears sparse. A well-stocked, native ‘iliahi forest on the northern boundary reported to have an average of 7 ‘iliahi per hectare and 0.3 m³ of heartwood per hectare in 2016. This inventory found an average of 10 ‘iliahi per hectare and around 0.2 m³ total heartwood per hectare (using slightly different equations). Additionally, a neighboring property to the south with the same forest type and elevation reported to have less than 1 ‘iliahi per hectare. Hāloa ‘Āina is not only representative of the other tropical dry forests nearby, but the land is also sustaining higher ‘iliahi populations due to forward-thinking sustainable management.

Table 6. Summary table of koa results, from 2020 Forest Inventory Report of Haloa ‘Āina

Property Level	Koa (trees ac ⁻¹)	Total Koa	SE _{68%} (%)	Volume (bf ac ⁻¹)	Total Volume (bf)	SE _{68%} (%)
Koa	11	21,062	33%	474	924,558	30%

On average, there are very few koa scattered throughout most of the property resulting in 11 koa per acre and 474 board feet per acre. However, the results are heavily influenced by strata HA2 which was harvested heavily in the 1980's and now contains a dense, even-aged stand of ~ 40-year old koa. The koa stand is not consistent throughout the entire strata and instead is characterized as patchy with varying densities.

5.7. No healthy timber harvests will occur in the next 10 years, and most likely will not occur within at least 30 years. Landowners will continue to observe forest structural growth and development to determine if a selective harvest will be helpful or necessary in 30 + years. Only salvage logging of dead and dying trees will occur (Section 5.3- Timber Harvest).



Figure 14. Koa (left) and sandalwood (right) reaching mature form at HA.

5.7.1. Hydrology

HA supports Kealahou Bay's Class AA water quality (highest EPA Clean Water rating) through watershed management. Forest protection and soil erosion mitigation upslope preserves the bay's clear and clean water and coral reef ecosystem enjoyed by thousands of residents and tourists each year.

HA's dry forests capture moisture daily from passing afternoon clouds, providing valuable water for the region's aquifer. Cloud water capture increases water recharge by 40% more than rainfall alone and is increasingly needed with an anticipated 30% population growth (2010-2020) in the region. The Hawaii Forest Action Plan (FAP) identified the South Kona region as a priority watershed, with forest preservation needed for long-term drinking water security. Water captured by HA's forest contributes to the SW Mauna Loa aquifer, directly servicing 15,000 residents, agriculture, and tourism.

5.7.1.1. Streams and wetlands

Most of the property is in MLRA 161B, “*Semiarid and Subhumid Organic Soils on Lava Flows*”, which is characterized by low-rainfall with no perennial streams. The higher elevation MLRA 161A, “*Lava Flows and Rock Outcrops*,” contains little to no ground water, supports limited rainfall, and therefore contains minimal surface water. The Kau volcanic rock aquifer has the lowest levels of total dissolved solids and the softest water of all the aquifers on the islands, although the salt levels are higher than most.

Table 7. Watersheds of South Kona from Coral Reef Assessment & Monitoring Program Hawaii (CRAMP)

South Kona Watersheds									
CRAMP ID #	Watershed name	Acres	Population	Stream name	Stream length sum	Rain lowest (mm)	Rain highest (mm)	Rain lowest (inch)	Rain highest (inch)
147	Ki'ilae	209141.6	3,828	N/A	N/A	500	2000	19.685	78.74
148	Kealahou	16658.84	4,090	N/A	N/A	250	1500	9.843	59.055

6

⁶ <http://cramp.wcc.hawaii.edu/tables/Hawaii.htm>

5.7.2. Geology and lava tubes

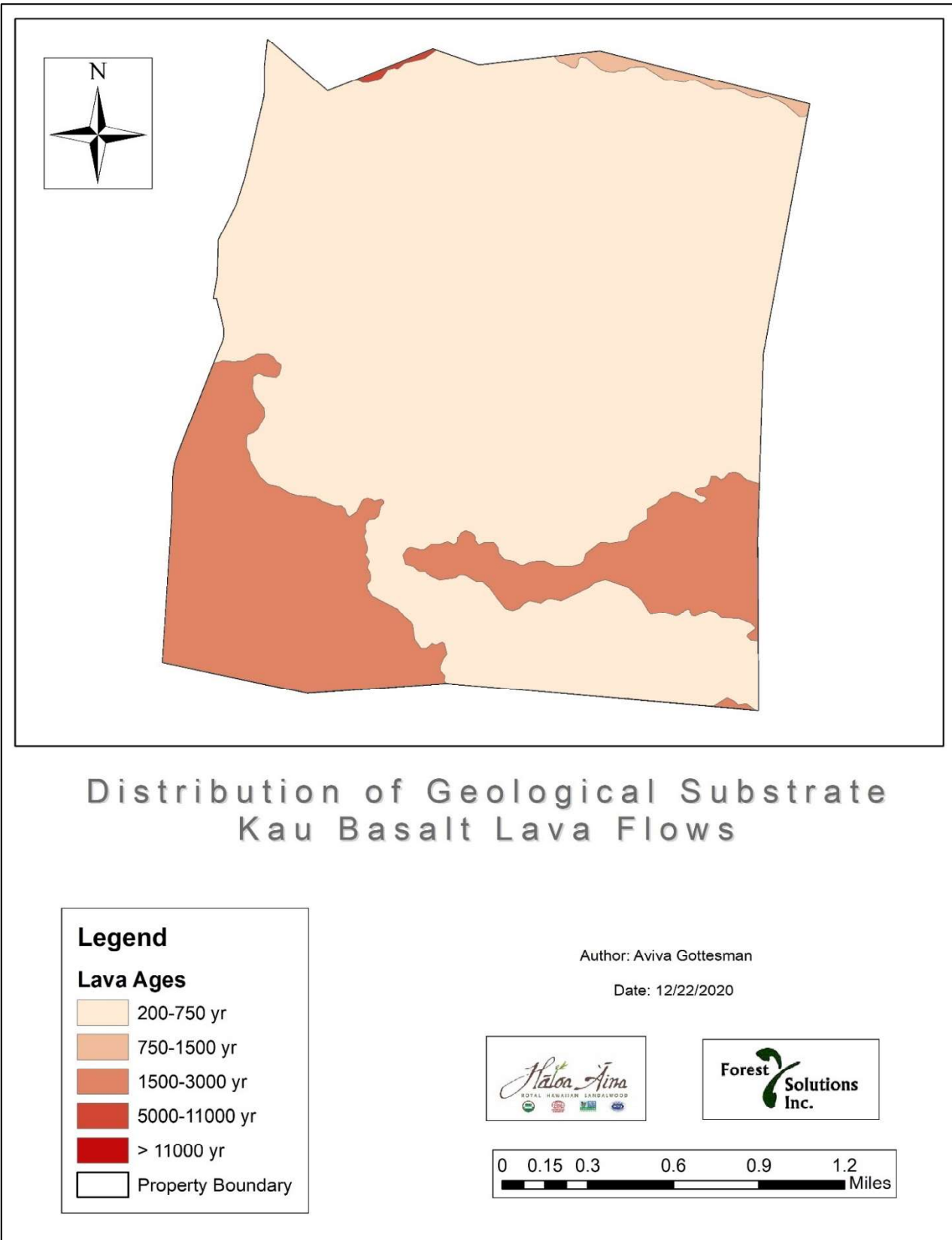


Figure 15. Geological distribution of lava flows at HA

5.8. Rainfall

The average annual rainfall on the property is 25.88 inches (656.8 mm). Rainfall is sparse though occurs consistently throughout the year ranging from 1.77- 2.93 inches per month. Typically, it is dry in the mornings and rains in the afternoons when the clouds come through from the mountains that surround the property.

All water for domestic use on the property is supplied through catchment and stored in water tanks.

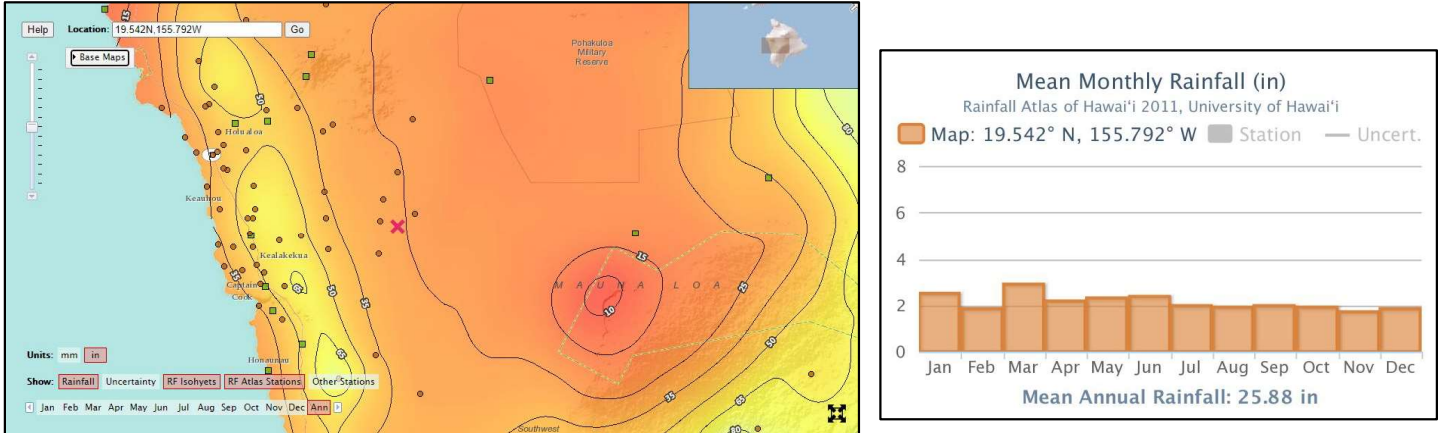


Figure 16. Rainfall data for HA from the Rainfall Atlas of Hawaii

5.9. Soil topography

Most of the property contains soils made up of Kekake- Lava flows complex covering over 70% of the land, with an additional 6% made up of the same components but more lava flows than Kekake (Lava flows- Kekake complex). The a'a flow is characterized by Mawae- Lava flows complex soils. The southwestern corner of the property is the same Kekake-Lava flows complex, but with a dominant component of Puukala soils. Over half of the property (59%) has a gentle but noteworthy slope of 10-25%, while almost 30% of the property is flat with less than 10% slope.

Table 8. Soil series and soil taxonomic classes (left) and acreage of each soil series (right table)

Soil Series	Soil Taxonomy
Kekake	Lithic Ustifolists
Puukala	Lithic Haplustands
Mawae	Typic Ustifolists
Manahaa	Typic Hydrudands
Hokukano	Lithic Fulvudands
Kealoha	Pachic Haplustands

Table 9. Slope distribution across the property.

SLOPE (%)	ACRES	PERCENT OF PROPERTY
2-10	773.58	28%
10-20	363.43	13%
10-25	1646.77	59%

Soil Series	Acres
<i>Kekake-Lava flows complex</i>	1,989
<i>Puukala-Kekake-Lava flows complex</i>	304
<i>Lava flows-Kekake complex</i>	170
<i>Mawae-Lava flows complex</i>	166
<i>Manahaa hydrous silt loam</i>	71
<i>Hokukano-Lava flows complex</i>	58
<i>Puukala medial silt loam</i>	15
<i>Kealoha very gravelly medial silt loam</i>	8
<i>Hokukano medial silt loam</i>	2
Grand Total	2,784

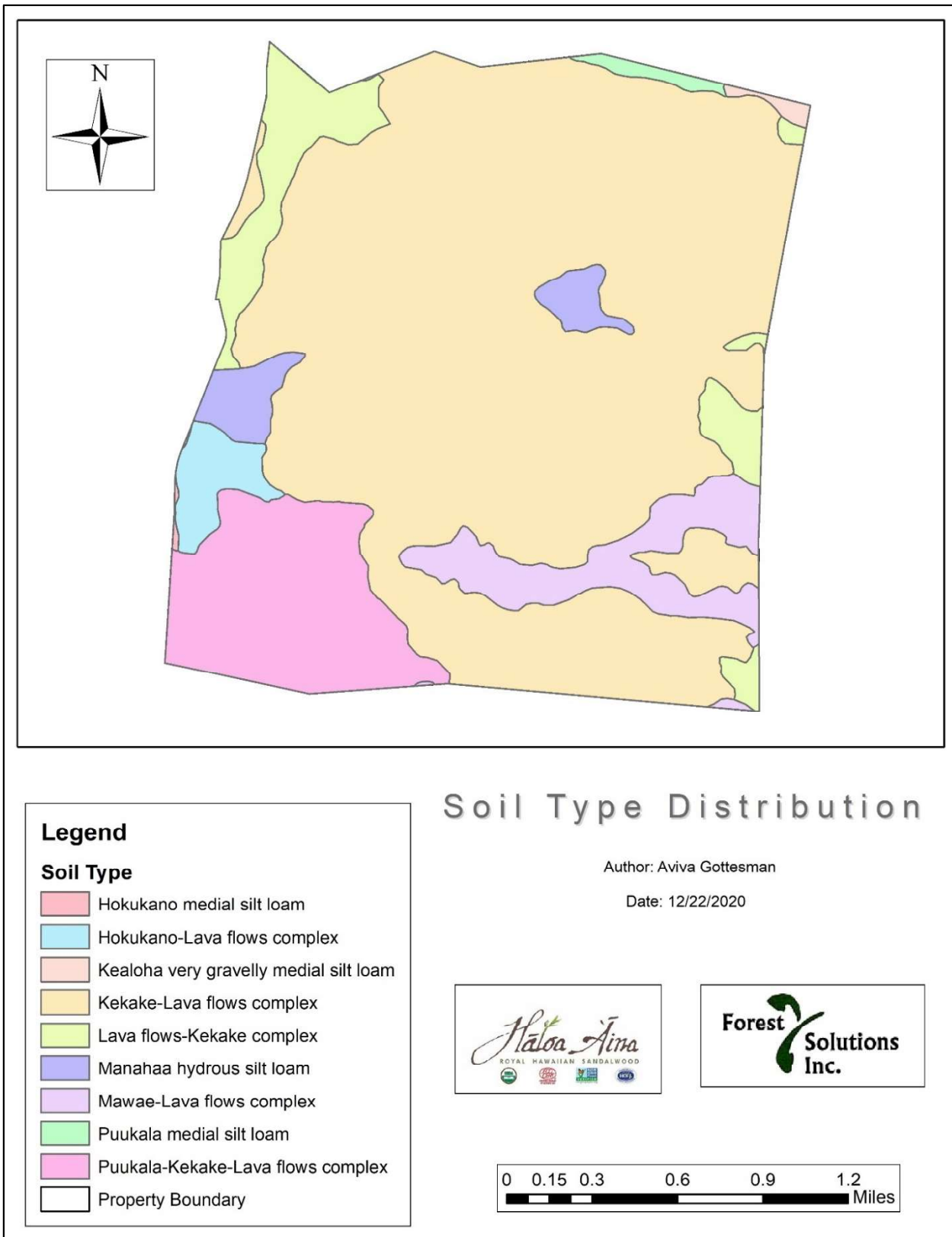


Figure 17. Distribution of soil types at HA

5.10. Fauna

5.10.1. Native Fauna

Five native birds are seen on the property, including the 'io (Hawaiian hawk, *Buteo solitarius*), the pueo (Hawaiian owl, *Asio flammeus sandwichensis*), the 'apapane (*Himatione sanguinea*), the 'amakihī (Hawaiian honeycreeper, *Chlorodrepanis virens*), and the 'elepaio (*Chasiempis sandwichensis*). The hawk and owl are both regularly seen perching on the māmane, koa, and sandalwood trees at HA or soaring above the property, while the other native birds are mostly only seen in one area of the forest.

The palila (*Loxioides bailleui*) was historically seen from the neighboring property. The forest type, elevation and location of HA historically were habitat for the palila and any restoration efforts could be beneficial for palila habitat. Additionally, the large spread of māmane in the forest of HA would certainly provide a great food source for the palila.

5.10.2. Non-native fauna

The property contains feral animals such as sheep and pigs, which are beneficial for the use of hunting on the property. However, sustainable game management is not an objective of this plan as these animals can reduce native forest regeneration and promote the spread of invasive plant species. If populations are kept to a low number of individuals through hunting and fencing, then the destructive habitat change of these animals is manageable. For this property, a low population would be about 1 ungulate per 30 acres, or no more than 100 individuals in all. It is estimated that there are currently about 60 individuals, though it is always changing due to movement into the property from the southern and eastern boundary.

Stray cattle and feral horses have been removed from the property. The horses came through the fence along the southern boundary and were shot on August 12, 2020 after a month of unsuccessfully trying to round them up for removal.

Rats and mice are commonly found around the processing facility and the infrastructure zone on the property. These rodents can negatively impact the 'iliahi regeneration by eating the seeds as they mature on the trees.

Many species of introduced gamebirds and alien songbirds are found at HA, including the red-billed leiothrix (*Leiothrix lutea*), Northern cardinal (*Cardinalis cardinalis*), Japanese White-eye (*Zosterops japonica*), mynah (*Acridotheres tristis*), spotted dove (*Streptopelia chinensis*), house finch (*Carpodacus mexicanus*), Northern mockingbird (*Mimus polyglottos*), California quail (*Callipepla californica*), Erckel's francolin (*Francolinus ercelli*), and turkey (*Meleagris gallopavo*).

5.10.3. Threatened and endangered species

The only known threatened or endangered species found on this property is the Hawaiian hoary bat (*Lasiurus cinereus*). The endangered Hawaiian hoary bat can be seen flying over the forest on the HA property. The Hawaii Wildlife Action Plan notes the bat has been severely impacted by a reduction in tree cover in the state. Various age classes of the managed forest at HA provide essential, quality habitat for the bat. Of the forest management practices recommended in this plan, none has any potential to negatively impact the fauna, and in fact their implementation will serve to enhance habitat availability and connectivity.

5.11. Threat assessment

5.11.1. Invasive species

The most common invasive plant on the property is raspberry, including both sawtooth raspberry (*Rubus argutus*) and Mysore raspberry (*Rubus niveus*). Additional species of concern include bull thistle (*Cirsium vulgare*), cape ivy (*Delairea odorata*) and banana poka (*Passiflora tarminiana*). Other common pasture weeds include fireweed (*Chamaenerion angustifolium*), Hamakua pamakani (*Ageratina riparia*), and Spanish needle (*Bidens pilosa*).



Figure 18. Cape ivy (left) and banana poka (right) which are manually removed across the property.

All invasive species are removed manually and are not controlled with the use of chemicals. The property is considered organic, and therefore no management within the forest involves the use of herbicides or pesticides. The one exception is the roadsides and firebreaks which are maintained through semi-annual treatments which do involve the spraying of herbicides. This is restricted only to firebreaks to keep the forest chemical-free and to maintain an organic sandalwood product.

5.11.2. Pests and insects

In addition to animals, the property is threatened by a non-native insect called the two-lined spittlebug (*Prosapia bicincta*). Evidence of the insect can be found on neighboring properties and could easily spread to the property due to the widespread groundcover of kikuyu grass. The impact of the two-lined spittlebug includes mortality of pasture grasses, potentially resulting in a groundcover of non-native weeds that are even more resilient and difficult to manage than the prior grasses.

A large component of the forest canopy was the naio tree; however, most of the older naio has died due to a thrip (*Klambothrips myopori*) that spread around the island and greatly impacted forest structure over the past ten years.

5.11.3. Rapid 'Ōhi'a Death

In 2014, a new fungal pathogen known as Rapido 'Ōhi'a Death (ROD) was identified on Hawaii Island and quickly had devastating impacts on the native forest. The trees are killed by ROD due to two distinct species, *Ceratocystis lukuohia*, which causes wilt disease, and *Ceratocystis huliohia*, which leads to canker disease. Most of the Island of Hawaii contains ROD infected forests and the most impacted forests are in the east and in the south. South Kona has only been impacted at lower elevations, though it is an increasing threat for upper elevation native forests. Precautions are put into place for visitors and workers at HA, involving regular sanitization of equipment and vehicles to prevent the spread of ROD into the forest. No ROD has been observed on the HA property.

5.11.4. Fire

Wildfire is a large concern on the property due to its location, climate, vegetation composition and historical fire occurrence. The grassland parcels are prone to fire, and they currently surround existing native forest parcels. Some of the non-native grass species can be found in the understory of the open forest, which would increase the likelihood that a fire could spread through the property.

In 2010, 3,800 acres of forest burned in the area. The last fire was in September of 2018 and was stopped at the western boundary, burning less than 200 acres on the adjoining property. This indicates that the landowners on the mountain have improved their abilities to respond to a wildfire crisis.

Currently, HA has water tanks and will be restoring a reservoir on the property within the infrastructure zone of the property, while two additional neighbors have large reservoirs on their properties as well. Together the neighbors are in the process of writing an updated Fire Management Plan for those living on the mountainside.

5.11.5. Flood risk

There is no flood risk on this property. Water may pond temporarily on the pahoehoe substrate, yet the prevailing slope and lack of streams nearby remove any chance of flooding.

5.11.6. Human Misuse

The risk of human misuse is low as there are almost always employees and caretakers on the property. Trespassing could occur if individuals hike up to the property and jump the fence, therefore security cameras have been installed around the cabin and processing areas as an additional security measure. Additionally, the landowners maintain good relations with the community which reduces the likelihood of human misuse.

5.12. Carbon sequestration & climate resilience

Climate resilience: Studies in Hawaii indicate that endemic and endangered plants are highly vulnerable to climate change and are already demonstrating a shift in habitats⁷. Rising temperatures combined with longer dry periods and heavier rainfall during wet periods will impact Hawaii forests. This increased interannual variability in precipitation and hurricane incidence will provide additional stresses on island ecosystems that are vulnerable. This could increase the impacts of non-native species that can withstand intense disturbances, invading areas when native species can no longer survive.

In 2018, the Pacific Island Climate Change Cooperative (PICCC) completed the Hawaiian Islands Climate Synthesis project that developed science-based syntheses of current climate trends and projected (Gregg 2018) future climate impacts on and adaptation options for terrestrial and freshwater resources in Hawai'i. According to the project report, climate trends observed in Hawai'i that will impact forest ecology include increase in air

⁷ Climate Change Brief, City and County of Honolulu Climate Change Commission. 2018.

temperature, decrease in rainfall, decrease in groundwater discharge to streams, changes to frequency and intensity of storm events, increase in frequency of drought and wildfire events, and changes in species distribution.

According to the Carbon Assessment of Hawai'i, the majority of HA is characterized as open koa-mamane dry forest (Jacobi et al., 2017). Overall, dry moisture zones are projected to expand across the islands, however, the leeward dry forests of the Island of Hawai'i may be an exception (Fortini et al. 2017). Maintaining a diverse mix of native forest species and controlling the invasive species populations can increase forest resilience to climate change. The management actions described in this plan all contribute to creating a more adaptable and stable forest ecosystem in the face of a changing climate.

Carbon sequestration: Ranching and agricultural sectors of Hawaii produce 1.7 million metric tons of CO₂ annually in Hawaii (2020 Annual Report⁸). In the effort to convert pastureland to native forest, HA is already contributing to carbon sequestration and carbon storage in the region. In a young forest such as HA, trees grow freely with increasing photosynthetic capacity. With an increase in disturbance frequency (i.e. fires, harvests), more young forests will grow and sequester carbon. However, a forest stand that matures into a complex structure has greater carbon storage capacity⁹. Based on this mechanism for carbon sequestration and storage, the young growing forest at HA will be in a phase of high carbon sequestration until it reaches maturity, and then it will continue to store high amounts of carbon. Future silvicultural interventions on a mature forest may in fact increase carbon sequestration rates once the forest is opened to regenerate again.

5.13. Desired future forest conditions

It is difficult to determine an exact metric for a desirable, commercially productive forest in terms of sandalwood oil production, because some of the finest sandalwood oil has come from small, young sandalwood trees. Therefore, the goal of this plan is to promote a sustainable, healthy, multi-age, multi-species forest with sandalwood growing alongside native species. By promoting a forest community that contains multi-aged sandalwood, there will be resources available into the future. As knowledge about the species increases and management techniques become more readily available, new silvicultural prescriptions can be adopted into future management plans.

The goal of this management plan is not to create a sandalwood plantation, as a sandalwood tree needs a host species to survive. This plan describes activities that would result in more biodiversity, more biomass, and more resiliency for the native forest. It will support the functions of the ecosystem in many ways, including watershed and climate.

The desired native forest at HA is a structurally complex native forest with both vertical and horizontal diversity. This means that from the understory to the subcanopy to the canopy, there are various species that take up different space and are using the resources available. It indicates that regeneration is occurring to secure future canopy trees. A vertically diverse forest has diverse structures, such as dead and dying snags and coarse woody debris, providing habitat for native birds, and storing carbon in the large biomass of fallen trees. As of 2020 the forest is young, with an abundant understory and subcanopy, with low volume of mature, canopy trees. Horizontal diversity already exists due to the various strata types associated with the property. There are large gaps of grassland, small gaps between māmane groves, and closed canopy, even-aged forest areas. This horizontal diversity increases the resilience to disturbances by providing different cover types and species cohorts. Property wide species richness is high, although it is patchy. This management plan works to improve

⁸ Hawaii Climate Change Mitigation and Adaptation Commission, 2020 Annual Report, P.16. <http://climate.hawaii.gov/wp-content/uploads/2018/06/FINAL-DRAFT-Climate-Brief-2018.pdf>

⁹ Harmon, Mark E. "Carbon sequestration in forests: addressing the scale question." *Journal of Forestry* 99.4 (2001): 24-29.

the forest so that the rare and infrequent species on the property increase in abundance, as well as increasing the common species in areas that are sparse.

6. Forest Management Prescriptions

6.1. Increase property access

Public events: Official public educational and access events organized and led by the County of Hawaii with the assistance of the Hawaiian Islands Land Trust (HILT) or a similar organization, in communication and partnership with the landowner, will occur at a minimum of four times a year (quarterly) and will follow the requirements of the conservation easement. Events must be publicized at least a month ahead of time and published in local papers and social media to ensure the opportunity for broad participation. Restrictions should apply to reduce repeat participants to allow room for new visitors. There should be no more than 20 participants per event. Events may consist of a tour of the processing facility and the forest nearby. There is a half mile loop trail (Figure 19) behind the processing facility to walk through the native forest and educate guests about native species. Volunteer activities may include planting native trees, weeding invasive species, native seed picking and processing, and other activities suitable for larger groups.

Private groups: HA hosts many local groups including hunters, scouts, kūpuna groups, hula hālau, school groups, and researchers. These events allow community members to see the forests some of them have never seen before. Some of these events, depending on the season and group, involve picking culturally important species for events or for making haku lei. These types of groups are small with no more than 14 participants.

In collaboration with groups such as Young Living Essential Oils, HA also provides educational and ecotourism opportunities (guided tours, volunteer work) for visitors. Private groups can pay for a tour of the property, while receiving amenities such as food, a cabin, and sometimes even live music.

If any of these events are publicized at least a month ahead of time, they can fulfill the public events requirement mentioned above.




To protect the native forest and keep the forest and visitors healthy and safe, all visitors must follow the rules listed below:

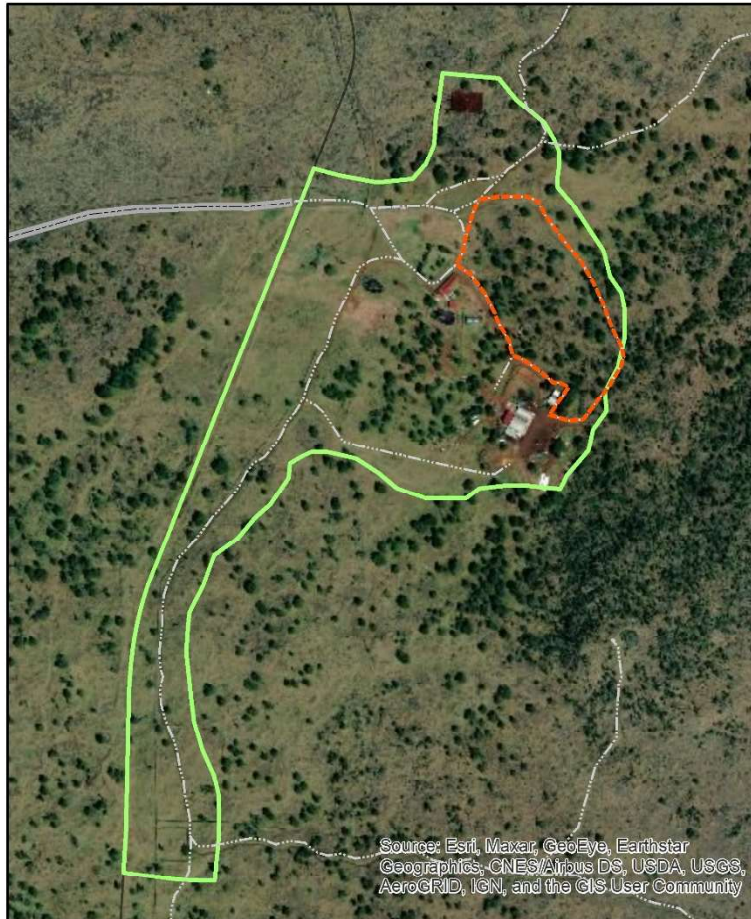
1. All visitors either leave their vehicles at the parking area by the cabin or carpool together in a van. HA has a private contract with Enterprise for 14 passenger vans that is available for groups to utilize if they choose. Leaving vehicles in one spot reduces the spread of invasive seeds from vehicles, and also keeps visitors off 4 x 4 roads that are in poor condition and could be damaging to the cars.
2. Planting activities and educational walks are contained to the front part of the property by the cabins to reduce the impact on the forest.
3. All groups have a guide from HA to show them the designated areas to visit. All visitors must stay on existing roads and paths and are kept within the “infrastructure” zone of the property (Figure 6). This is to minimize the impact on the surrounding native forest which contains many sensitive understory plants. Additionally, staying on paths is an important rule for safety as the surrounding forest has rocky, uneven terrain, holes in the ground, and vines/groundcover one could trip on. Due to the remoteness of the property, it is critical to keep all participants safe and prevent any unnecessary trips to the hospital.
4. Each participant must fill out a waiver form prior to the start of the event.
5. No open fires, campfires or fireworks are allowed, to prevent any chance of starting a wildfire.

Haloa Aina Visitor Area & Trail



Legend

-  Loop Trail: 1/2 mile
-  4 x 4 Roads
-  Access Road
-  Visitors area
-  Property Boundary



Author: Aviva Gottesman

Date: 1/21/2021

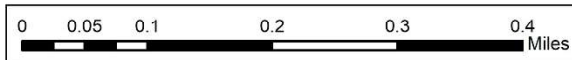


Figure 19. HA visitor area and half mile loop trail behind the processing facility and nursery.

Collaborative access: HA works closely in collaboration with other private companies that work in the field of forest conservation on the island. The Three Mountain Alliance (TMA) watershed partnership manages the neighboring KS property of Lupea which contains over 5,000 acres of forest, being managed for conservation purposes. HA and TMA have open lines of communication regarding effective management of ‘iliahi, for example, studying the effects of fence vs. no fence and ungulate control vs. no ungulate control. HA allows KS and TMA road access to improve efficiency for the management of Lupea, and in exchange KS will install fencing along their shared boundary. Additionally, HA assists in the supply and planting of seedlings to KS. Both physical resources as well as knowledge based resources are being shared and exchanged between the different entities with the goal of improving restoration techniques across the landscape.

This collaborative attitude is also extended to Forest Solutions, a forest management company that also works in native forest conservation in the region. HA has provided access to neighboring properties, a place to sleep for researchers and employees working on the mountainside, and even space in the HA nursery to store seedlings.

Additionally, there is collaboration between KS, Hokukano Rd. neighbors, and HA to update the Fire Management Plan for the area. The current Fire Management Plan is 7 years old and many changes have occurred on the property, such as improved roads and newly constructed reservoirs. This collaboration does not yet have a definitive timeline.



Figure 20. Aerial photo of HA, from property owner Wade Lee.

Table 10. List of organizations and groups that have visited Hāloa ‘Āina .

Visiting groups and organizations	
Universities and researchers	International Sandalwood Foundation - Dr. Danica Harbaugh Reynaud
	University of Hawaii (student research team)
	California State University – Chico
	Purdue University – Tropical hardwood improvement (Tawn Speetjens)
	University of Hawaii CTAHR – Dr. JB Friday
Government groups	Department of Land and Natural Resources
	Department of Hawaiian Homes Land
	County of Hawaii
	State Legislators including the entire Finance Committee
	NRCS - Federal Government
Local Hawaii organizations	Hawaii Leeward Planning Commission
	Hawaii Forest Industry Association
	Royal Order of Kamehameha
	Kamehameha Schools
	Hawaii Conservation Alliance
Youth education	Boys Scouts of America
	Waiakea High School
	Honokaa High School
	Kanu o Ka Aina
	West Hawaii Exploration Academy
	Konawaena Middle School- planting with 7 th graders at school with HA provided seedlings
	Hula Halau – various groups, including noteworthy Halau O Kekuhi
Forest managers	Forest Solutions Inc.
	Three Mountain Alliance
Private groups	Palani Ranch
	Greenwell Farms
	Young Living Essential Oils

6.2. Management activities to maintain and expand native forest land

In the next 10 years, management prescriptions will focus on the northwestern side of the property (Zone A). The Forest Management Units (FMUs) in Zone A have low stem density due to the fire and are generally more open forest than the FMUs in Zone B and Zone C. Overall, Zone A has an estimated 56% forest land, making it the least forested area of the property. Because of this, the remaining FMUs will not have a detailed prescription within this management plan. Actions in Zone A will promote establishment and expansion of native forest land through planting and native forest enrichment through invasive weed control. In an ideal scenario where funding was available to intensively plant (according to Figure 22. Proposed areas of intensive planting to increase cover from 50 stems per acre to 250 stems per acre (shrubs and trees both included).), Zone A could be increased to 76% forest land.

Currently the whole property contains about 80% forest land. Depending on funding for planting, forest land could potentially increase 10% once the seedlings planted during the 10-year period mature into tree cover. Without any funding to plant intensively, the forestland will still increase as the māmane and sandalwood continue to regenerate in the open grassland patches, leading to about 84% forest land. No agriculture or pasture activities are involved in this plan, therefore there is no decline in forest land anticipated in the next 10 years, excluding any unseeable natural disturbances.

Table 11. Forest Management Units (FMUs) and management prescriptions.

Management Zones	Forest Management Unit (Figure 23)	Size (acres)	Prescription
Zone A: Low stem density, open forest	Infrastructure	59	Not in management plan
	A1	412	Control weeds, plant natives, native forest enrichment, feral ungulate control
	A2	307	Control weeds, plant natives, native forest enrichment, feral ungulate control
	A3	186	Install grazing animal fuel break (13 ac), feral ungulate control
Zone B: High stem density, open forest	B1	341	Maintain native forest land, monitor for new invasive outbreaks, monitor spittle-bug and other pests, maintain low ungulate populations, additional/detailed active management in future management plans
	B2	490	
	B3	217	
Zone C: Medium-High stem density, open forest	C1	199	
	C2	208	
	C3	147	
Forest level	Total Property	2,780 ac	Reduction of woody ground debris, monitoring new weeds, feral ungulate control, public access promotion, monitoring and maintenance
		8.5 mi	Fence maintenance around perimeter
		26.5 mi	Perimeter boundary and all roadsides sprayed for fuel break maintenance
		1.65 mi	Installation of final 4 x 4 access route and fuel break

6.2.1. Ungulate control

Ungulate populations will be limited through the perimeter fence that surrounds the property. The overall management goal is for the property to be an ungulate free zone; However, continued ingress of feral animals from surrounding areas will occur through weak areas in the fence. As per the conservation easement, the owner may use hunting as a means of ungulate population control. The game animal population will not be intentionally increased; however, hunting will be implemented to keep the feral animal population low (less than 100 individuals).

Hunters are invited onto the property on the weekends and they are provided the cabin and its amenities. Typically, this is restricted to close friends and family with rules on where and when they can hunt and a mandatory waiver they must sign. The general rules for hunters are, “if you see it, you kill it” which prevents trophy hunting and promotes a low animal population. Most of the ungulates are entering the property from the eastern rock wall and southern boundary (Figure 6); however, ingress will be reduced once neighboring properties complete pending fence projects. The eastern boundary is 2.3 miles of cattle rock wall (light blue, Figure 5), which is planned to be replaced by a 6’ hog wire fence in the next couple of years. On the southern boundary, there is a 1.1 mile strip of 4 string barbed wire fence (orange, Figure 5), that needs to be replaced with hog wire. The neighbor has not provided a date on the replacement fencing project.

6.2.2. NRCS code 383 – Fence maintenance

The fence will be checked regularly by those working on the property and fence maintenance will occur as needed. Additional monitoring will occur after earthquakes and severe storms to quickly determine if any new damage was incurred.

6.2.3. NRCS code 595 - Integrated pest management

Maintaining healthy seedlings is the first and best defense against pests and pathogens, yet some level of disease or pest infestation may be unavoidable even in healthy plantings. This plan prescribes an integrated pest management (IPM) approach to dealing with pests and pathogens. The IPM framework involves three sequential assessments, (1) monitoring potential pest agents, (2) identifying threshold densities or populations at which pests cause unacceptable economic damage, and (3) identifying and applying the most effective control agent. To control insect pests in IPM, the first step is to identify potential pest species. The specific control method will depend on the severity and nature of infestation. A localized, acute infestation can be controlled using manual methods. The most important aspect of pest control is the early detection and management of incipient problems.

Rodents are the main pest that need to be managed; however, the owls on the property remove some of the rodents. No research has been conducted at this time regarding this relationship, though future studies on native bird predation may involve wildlife cameras to observe these feeding patterns. The landowners manage rats, mongoose, and cats around the infrastructure zone of the property. They use bait stations and occasionally live animal traps which is adequate for the populations that exist. If the issue of rat predation on sandalwood seed becomes more severe, the IPM approach may include the use of CO²-powered automatic rat traps to control the rat population.

6.2.3.1. Two-lined Spittlebug management

From November to late February, adult Two-lined Spittlebug (TLSB) activity is very low. Eggs laid in the late fall will hatch in March with adult TLSB activity ramping up in May of each year. This is the most critical time to take preventative actions, such as cleaning vehicles regularly after passing through an infested area. It is vitally important not to move plant materials and soil from parts of Kona that contain a TLSB infestation, to prevent movement of the eggs and/or nymphs.

Vehicle cleaning protocol for the prevention of TLSB:

1. Visually inspect the interior, bed, and undercarriage of vehicles and trailers after passing through an infested area and remove (kill) any adults found using a small spray bottle of a contact pesticide, eg. Sevin SL, Carbaryl 4L are two options that will kill TLSB.
 - a. A pyrethrin-based product could be used on vehicles.
 - b. Use pesticides to target adults on the exterior of vehicles.
2. Spray down a vehicle with pressurized water when available.
3. Vehicles that visit Kona pastures or forests impacted by TLSB should be carefully cleaned of all mud, soil, and plant parts.

6.2.4. NRCS code 650 - Brush management

All invasive weed and brush management is done manually by hand removing weeds. Invasive brush removal target species are raspberry (*Rubus argutus*, *Rubus niveus*), bull thistle (*Cirsium vulgare*), cape ivy (*Delairea odorata*) and banana poka (*Passiflora tarminiana*). Poka is controlled by cutting the plant, pulling the root, and leaving the vine to dry out and die. Employees monitor the presence of weeds on the property and the crew does weekly invasive weed removal. Additionally, it is important to note that the target species could change due to an outbreak of an unknown invasive weed. If the two-lined spittle bug is introduced on the property and removes the grass understory, it is unknown what weeds will take over and become “high priority weeds.”

6.2.5. NRCS code 490 – Tree/Shrub Site Preparation

The first action in tree establishment is competition control, which is done by manually removing raspberry, bull thistle, and other bushy, invasive plants. The grass is left alone, as the sandalwood uses it as an intermediate host, ultimately suppressing the grass as the tree grows bigger and uses more resources. The grass also shades out other, more competitive invasive species.

6.2.6. NRCS code 612 – Tree establishment: seedlings and planting

After site prep, a hole is created for each plant using a drill with an auger. The planting substrate is made in-house and is a sterile mixture of soil from the property and “spent chip” of sandalwood (the chipped wood that has already been processed for oil extraction).

Seedlings will be produced by HA staff and procured from the greenhouse on the property. The seedling alone costs \$4.38/seedling, a total cost of \$11/seedling with the cost of labor for nursery operations, soil, and other necessary inputs. The nursery at HA uses seeds strictly from the property and features a diverse array of native forest plants. The nursery has a capacity of over 5,000 seedlings, which are supplied for planting on the HA property and on neighboring properties.

Table 12. Native species used for reforestation at HA.

Species for reforestation	
Common Name	Scientific Name
‘iliahi	<i>Santalum paniculatum</i>
koa	<i>Acacia koa</i>
‘ōhi‘a	<i>Metrosideros polymorpha</i>
māmane	<i>Sophora chrysophylla</i>

naio	<i>Myoporum sandwicense</i>
pilo	<i>Coprosma sp.</i>
‘a‘ali‘i	<i>Dodonaea viscosa</i>
pūkiawe	<i>Leptecophylla tameiameia</i>

The first planned planting in this management plan cycle will take place in the northwestern corner of the property. This location burned during the last wildfire and is completely barren of plants today. The area is 152.4 acres and is in the application process for 2-years of NRCS funding (Figure 21). The area will be planted at a density of 150 plants per acre, which is equivalent to 13 ft x 13 ft spacing. A diverse mix of seedlings from the nursery will be planted throughout the area.

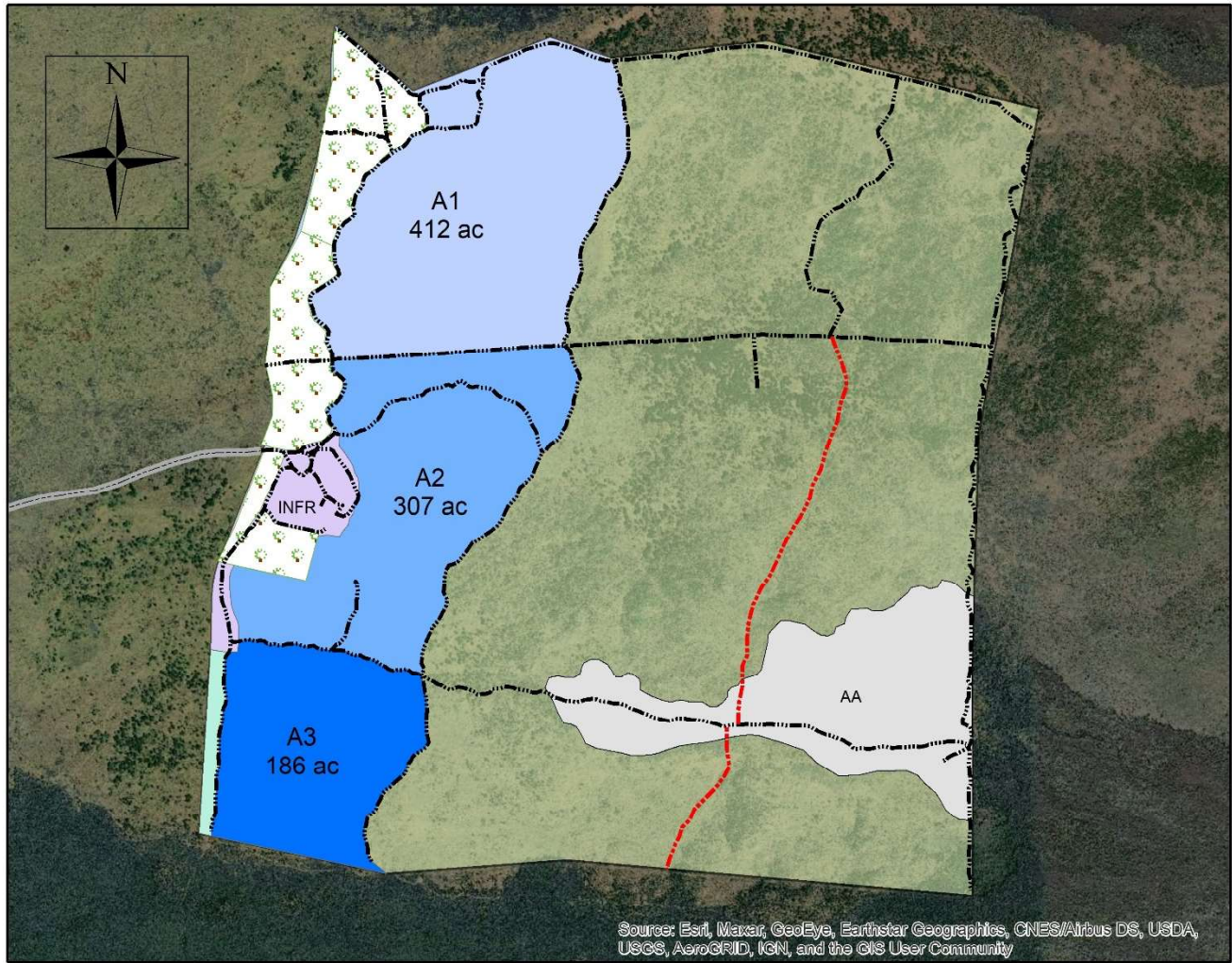
Table 13. NRCS planting project budget by location (unit), project to be implemented in 2021-2023.

Planting Unit Label	Area Ac	Planting		
		Planting Density (Plants/Acre)	Plants Required	Planting Cost (\$11/plant)
1	19.3	250	4825	\$53,075.00
2	9.7	250	2425	\$26,675.00
3	27.8	250	6950	\$76,450.00
4	32.3	250	8075	\$88,825.00
5	28.1	250	7025	\$77,275.00
6	35.2	250	8800	\$96,800.00
Total	152.4	250	38100	\$419,100.00

Additional planting within FMU A will occur during this 10-year management plan; however, the specific locations and planting density is currently undecided. It will depend on the success of planned planting and the outcome of natural disturbances, such as the two-lined spittle bug for example. The area surrounding the 2021-2023 planting currently has around 50 trees per acre, therefore the goals of the anticipated planting regime will involve increasing that to 250 trees per acre through spot planting.

Table 14. Proposed planting acreage in Zone A by 2- year interval (Map of areas: Figure 22).

Year	Acres
1-2	152
3-4	126
5-6	117
7-8	122
9-10	73
Total	590



Legend

- - - - - Planned Road & Fuel Break: 1.65 miles
- 4 x 4 Roads
- Access Road

- NRCS 2021 Planting: 152 ac
- Animal grazing fuel break: 13 ac

Forest Management Units

- A1
- A2
- A3
- A'a flow
- Infrastructure
- Property Boundary

Haloa Aina Proposed Management Activities



Author: Aviva Gottesman

Date: 1/19/2021

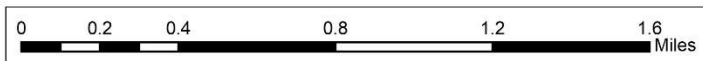


Figure 21. Zone for NRCS planting project (2021-2023) and additional planned management projects.

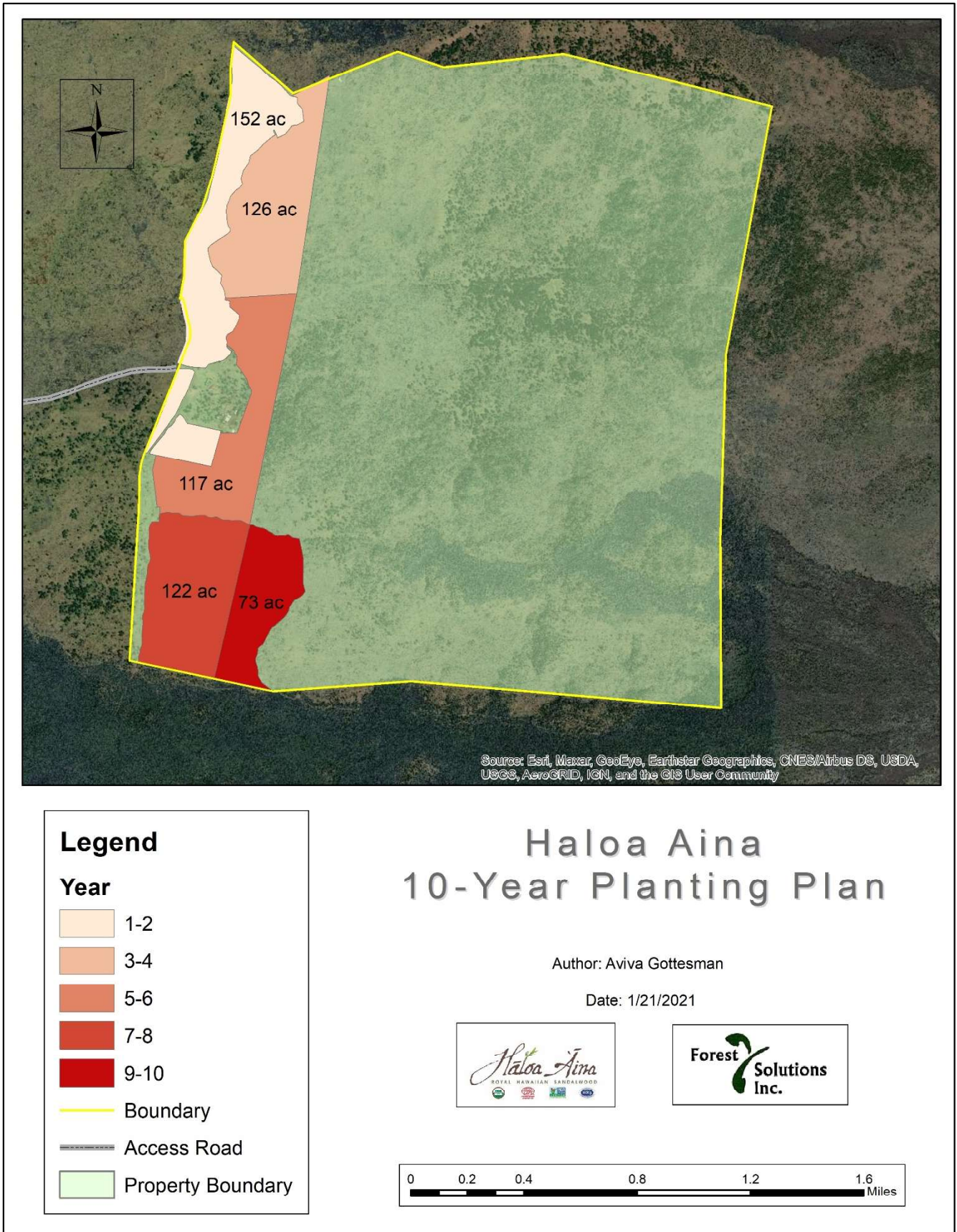
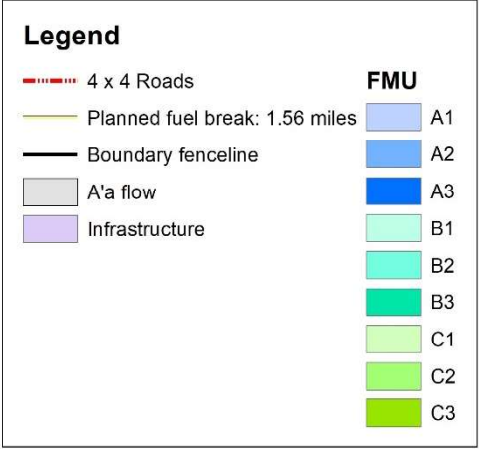
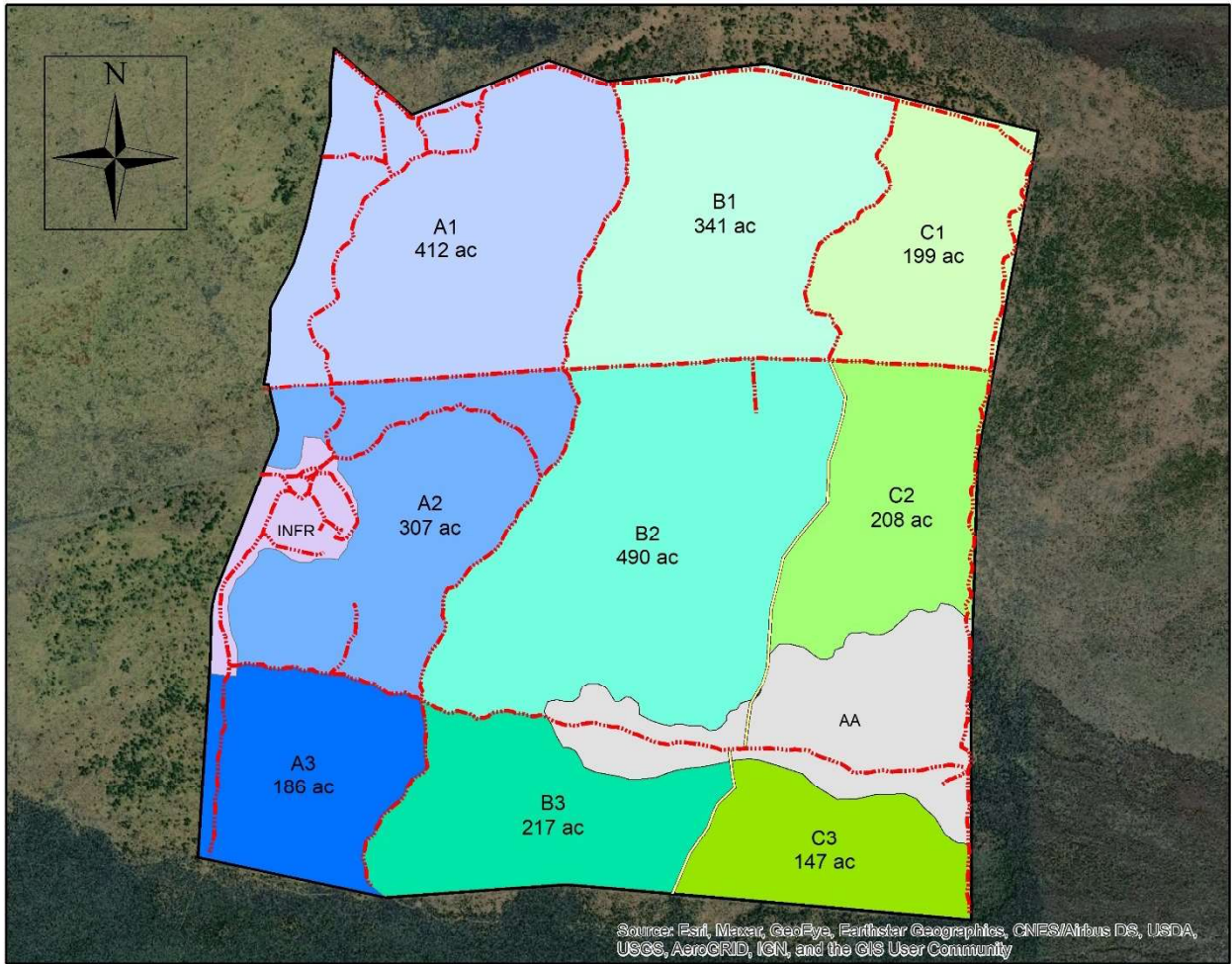


Figure 22. Proposed areas of intensive planting to increase cover from 50 stems per acre to 250 stems per acre (shrubs and trees both included).



Haloa Aina Forest Management Units



Author: Aviva Gottesman

Date: 1/15/2021

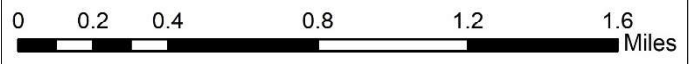


Figure 23. Proposed Forest Management Units divided by access roads and forest composition.

6.3. Timber Harvest

6.3.1. Dead and dying salvage harvest

No harvesting of live, healthy trees will take place in the next 10 years, and likely will not occur for at least 30 years if it will happen at all. The only removal of volume through harvesting will be low levels of volume from salvage harvests of dead or dying trees, i.e. snags. A snag is defined as 1. A standing dead tree from which the leaves and most of the branches have fallen, 2. A standing section of the stem of a tree broken off at a height of < 20 ft (also called a stub). Dead or dying trees are identified on the property using the above definition, partnered with a technique called a “scratch test”. Instead of scratching the bark, landowners observe an area that is already exposed due to animal damage or a piece of bark that’s coming off to determine if the cambium layer is dry indicating a dead stem.

If ROD or other natural disturbances impact the forest, trees may need to be removed, for example to minimize the impact of ROD or to clear a burned area before planting. Salvage harvesting and accompanied root ball removal of sandalwood will only occur with such disturbances, or in opportunistic situations. An opportunistic situation would be if a sandalwood is dying near a fence and must be removed to prevent damage to the fence. Then landowners would remove the tree with the root ball, instead of letting it fall onto the fence. Similarly, if a dead or dying tree is located near a road and can easily be accessed, then it may be removed. Landowners will not be going into the forest and removing dead or dying trees that are in sensitive areas, difficult to retrieve, and that may cause the death of other natives in the removal process. All harvests will follow the requirements of the conservation easement agreement quoted below:

Section II.B.1. Harvest is limited to no more than twenty-five (25) percent of the total volume of merchantable species in any one ten (10) year period, unless Owner or Primary Co-Holder can demonstrate that the actual merchantable volume accumulation on the Protected Property justifies a higher or lower allowable harvest. Allowable harvest over a ten (10) year period will be determined by timber inventory of the Protected Property and outlined in the approved Plan.

Landowners are anticipating a fraction of the allowable volume will be removed in the next 10 years, assuming there are no catastrophic natural disturbances. If 30 dead and dying sandalwood trees were salvage harvested, it would only be 0.3% of the total sandalwood trees estimated to be on the property based on the 2020 forest inventory. The total volume of these 30 trees would be less than 1% of the total volume predicted to be on the property. This is much less than 1% of the total volume of merchantable species (koa & sandalwood both). This data is based on the calculated volume of dead and dying trees (tree class 4 and 5 in the inventory) of various sizes that were physically measured in the inventory.

Any harvesting will follow the requirements of the easement, including a preliminary cruise of the trees to be harvested and notifying the Co-holders after the harvest:

Section II.B.2.a. Prior to every harvest following the Effective Date, Owner shall conduct a cruise of the merchantable forest volume in the planned harvest area, as defined in the Plan. The forest cruise must include a third-party verification of the merchantable volume. Owner shall provide the cruise to Co-Holders within sixty (60) days following completion.

b. Owner shall provide Co-holders with information on all harvests including location, species harvested, and volume harvested within sixty (60) days following completion of the harvest for monitoring, as required by the Primary Co-Holder.

If a large natural disturbance occurs and a large area of land is salvage harvested, the landowners will reforest with native species to return the property to 75% forest land as described in the following section of the conservation easement:

Section II.B.4. In the event of catastrophic wildfire, windstorm, insect infestation, or other natural catastrophe, Owner may exceed the harvest levels set forth in the Plan with the prior approval of Primary Co-Holder, provided that such salvage harvest is consistent with the purposes and terms of the Easement. Such prior approval may be predicated upon a determination of whether and when a Plan update will be required to revise post-salvage harvest levels and reforestation plans. After a forest products harvest predicated on a catastrophic event (salvage harvest), Owner shall reforest with native species as necessary to re-establish a relatively natural native forest composition and the seventy-five (75) percent forested cover required by the FLP.

Best practices for root ball removal are as follows:

Section II.B.3. Below ground heartwood (Santalum paniculatum) root balls may be removed from the Protected Property if soil disturbance is done in an environmentally compatible manner and the removal techniques and subsequent forest silviculture are described in the Plan.

To remove the root ball from a dead or dying tree, the root is broken in a 12 in radius around the tree stump. Once it is freed from the rest of the root system, the entire tree is pushed over and the whole root ball and tree is brought to the processing facility. The root ball weighs an average of 35 kg, is bulbous and gnarled, and difficult to transport on its own.

No root ball extraction will occur in areas that are difficult to access and that would result in the death of sandalwood regeneration or other native species. Scarification of the forest floor may occur because of root ball extraction; however, scarification is beneficial to forest regrowth and should result in additional sandalwood and koa regeneration.

By leaving the remaining root system in the soil, it promotes a new population of sandalwood trees that sprout from the disturbed roots. This regeneration returns in such thick density, it is likely that future stand improvement might involve thinning of the regeneration. Due to the lack of research on sandalwood, it is unknown if thinning the regeneration will lead to more sprouting of new growth from the stems that were cut. Therefore, it is likely that the landowners will wait until the regeneration becomes a taller, thicker, shady canopy before doing any thinning at all.

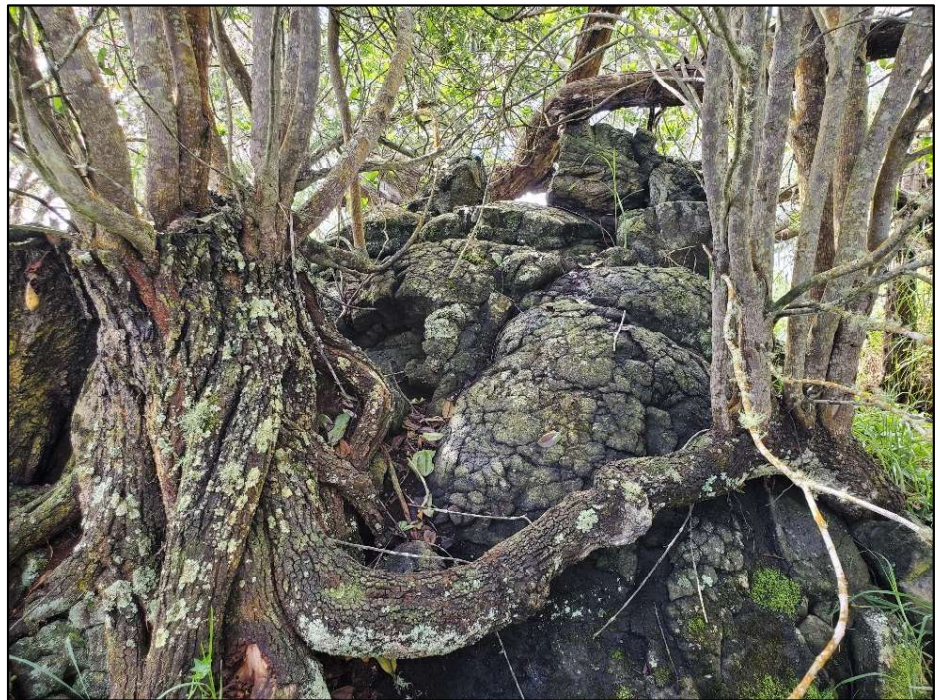


Figure 24. Abundant regeneration of sandalwood saplings from a sandalwood stump (left) and root (right).

6.4. Wildfire prevention

6.4.1. NRCS code 383 – Fuelbreak Construction

In the next 10 years, the property owners will complete the property wide fuel break by adding 1.65 miles of 4 x 4 access roads with semi-annually sprayed roadsides (Figure 21). This will be constructed with the purpose of increasing access within the forest if there is a fire, which also provides a barrier (fuel break) to minimize the spread of a fire in the eastern side of the property.

6.4.2. NRCS code 383 – Fuelbreak Maintenance

Twice a year, fuel break maintenance will occur along the boundary and roadsides. This will be done through chemical spraying to minimize the chance of future fire threats. The perimeter fuel break prevents fires encroaching from outside the property boundary, while the roadside fuel breaks promote firefighting access throughout the property.

6.4.3. Animal grazing invasive brush management and fuel break

A fenced strip of 13 acres between the road and the boundary fence on the southwestern boundary is being used as an animal grazing firebreak. The area will contain sheep, several cows, and horses, to minimize the impact on the soil while they eat the invasive brush. This clearing will serve as a barrier for incoming new invasive species outbreaks, as well as a barrier for fire coming from neighboring properties below.

This management technique does not involve providing any feed for the animals, they will only eat what is available within the fenced in parcel of land.

6.5. Monitoring of management activities

It is critical to actively monitor the forest to determine the success of management activities so they can be adapted as needed based on the results on the ground. Monitoring of ungulate populations, monitoring forest health and forest land, and monitoring specifically required by the conservation easement will all be important elements resulting in an active and effective monitoring program.

Table 15. Frequency of monitoring to assess management activities at HA.

Monitoring activity	Frequency
Tree establishment mortality	1-3 months after planting
Fence conditions	Checking fences whenever passing it on the road, monitoring after storms
Invasive species outbreaks	Crews monitoring through work on property, 6 months after brush removal treatment for stems that were missed
Ungulate populations	Hunters share observations with landowners, staff observes browse (see below for monitoring goals- Section Monitoring ungulates 5.5.1)
Animal grazed fire break	Monthly or bi-monthly monitoring to assess if weed populations are decreasing and to observe impact of animals on the parcel.
Impact of visitors	Regularly checking for new invasives brought by visitors around infrastructure zone, annual assessment of planting area and trail for visitors
Additional monitoring for research purposes	Ongoing monitoring projects include researching resistant naio hybrids, experimental planting of sandalwood with various host species, etc...

6.5.1. Monitoring ungulates

The main source of ungulate monitoring will be from hunters and staff on the property. Hunters can share with landowners the sizes and sexes of animals that were removed from the property during the trip, as well as their observations of herd locations and heard population sizes. Staff at HA should provide property owners with their observations of browsed regeneration, ungulate droppings, and animal sighting locations. Once the weak boundary areas are completely fenced, then staff should see the population decrease on account of the hunting.

Monitoring goals may be as follows:

1. The population of 60-100 ungulates (30 per acre) that is considered “low” is consistent and does not increase.
2. New fence projects are completed in 2 years and populations decline (~30 individuals, 1 per 100 acres).
3. Remnant population of less than 10 individuals that are difficult to find and remove.
4. Zero ungulates on the property.

6.5.2. Monitoring forest land

To maintain native forest land and to increase its density over the next 10-years, the preliminary analysis described in the forest inventory and management plan should be looked at as the baseline of the property. The forest inventory should be referenced in the future at regular intervals of 10-years, at the time of the management plan revisions. The inventory will report on forest health, forest land, and timber resources. If harvesting forest products is occurring or planned in a 10-year period, the inventory will be even more important to determine impacts of the silvicultural activities. Satellite imagery and forest inventories can be used to determine the percent cover of native forest and species diversity and should be compared to the results of the previous inventories. This will provide long-term information on changes to the forest on the property over time.

6.5.3. Monitoring for Conservation Easement

The State of Hawaii will monitor the property annually for compliance with the Conservation Easement. The property will have a Baseline Documentation Report completed prior to completion of the Conservation Easement. This baseline will document the current condition and conservation values of the property. The State will use the Baseline Documentation Report for monitoring and enforcement of the easement.

7. Budget and Schedule

7.1. Budget

This FSP submission is not requesting stewardship funds at this time, due to the additional requirements of an Ecological Assessment (EA) and an additional archeological assessment for projects with long-term goals of commercial activity. The following budget of management activities is included to provide the opportunity to submit the plan for funding at a future time.

Total:	\$ 1,079,347.50	\$ 1,079,347.50	\$ 2,158,695.00
---------------	------------------------	------------------------	------------------------

Activity	NRCS code	Cost unit ⁻¹	Firebreaks 18.9 miles	HA fence 2.9 miles	A1 412 ac	A2 307 ac	A3 186 ac	Zone 2 1602 ac	
Year 1 (2021)									
Fence maintenance	382	\$ 1,500	\$ -	\$ 4,380	\$ -	\$ -	\$ -	\$ -	
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	
Brush management	314	\$ 150	\$ -	\$ -	\$ 11,250	\$ -	\$ -	\$ -	
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ 206,250	\$ -	\$ -	\$ -	
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Year subtotal:	---	---	\$ 6,598	\$ -	\$ 217,500	\$ -	\$ -	\$ -	
NRCS%	---	---	50%	50%	50%	50%	50%	50%	
Applicant share:	---	---	\$ 3,299	\$ -	\$ 108,750	\$ -	\$ -	\$ -	
FSP Share:	---	---	\$ 3,299	\$ -	\$ 108,750	\$ -	\$ -	\$ -	
Year 1 Applicant total:	\$	112,048.75							\$112,048.75
Year 2 (2022)									
Fence maintenance	382	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	
Brush management	314	\$ 150	\$ -	\$ -	\$ 9,450	\$ -	\$ -	\$ -	
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ 173,250	\$ -	\$ -	\$ -	
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Year subtotal:	---	---	\$ 6,598	\$ -	\$ 217,720	\$ 26,095	\$ 15,810	\$ 136,170	
NRCS%	---	---	50%	50%	50%	50%	50%	50%	
Applicant share:	---	---	\$ 3,299	\$ -	\$ 108,860	\$ 13,048	\$ 7,905	\$ 68,085	
FSP Share:	---	---	\$ 3,299	\$ -	\$ 108,860	\$ 13,048	\$ 7,905	\$ 68,085	
Year 2 Applicant total:	\$	112,048.75							\$112,048.75
Year 3 (2023)									
Fence maintenance	382	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	
Brush management	314	\$ 150	\$ -	\$ -	\$ 9,450	\$ -	\$ -	\$ -	
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ 173,250	\$ -	\$ -	\$ -	
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ 35,020	\$ 26,095	\$ 15,810	\$ 136,170	
Year subtotal:	---	---	\$ 6,598	\$ -	\$ 217,720	\$ 26,095	\$ 15,810	\$ 136,170	
NRCS%	---	---	50%	50%	50%	50%	50%	50%	
Applicant share:	---	---	\$ 3,299	\$ -	\$ 108,860	\$ 13,048	\$ 7,905	\$ 68,085	
FSP Share:	---	---	\$ 3,299	\$ -	\$ 108,860	\$ 13,048	\$ 7,905	\$ 68,085	
Year 3 Applicant total:	\$	201,196.25							\$201,196.25
Year 4 (2024)									
Fence maintenance	382	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	
Brush management	314	\$ 150	\$ -	\$ -	\$ 9,450	\$ -	\$ -	\$ -	
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ 173,250	\$ -	\$ -	\$ -	
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Year subtotal:	---	---	\$ 6,598	\$ -	\$ 182,700	\$ -	\$ -	\$ -	
NRCS%	---	---	50%	50%	50%	50%	50%	50%	
Applicant share:	---	---	\$ 3,299	\$ -	\$ 91,350	\$ -	\$ -	\$ -	
FSP Share:	---	---	\$ 3,299	\$ -	\$ 91,350	\$ -	\$ -	\$ -	
Year 4 Applicant total:	\$	94,648.75							\$94,648.75
Year 5 (2025)									
Fence maintenance	382	\$ 1,500	\$ -	\$ 4,380	\$ -	\$ -	\$ -	\$ -	
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	
Brush management	314	\$ 150	\$ -	\$ -	\$ 8,850	\$ -	\$ -	\$ -	
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ 162,250	\$ -	\$ -	\$ -	
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Year subtotal:	---	---	\$ 6,598	\$ 4,380	\$ -	\$ 171,100	\$ -	\$ -	
NRCS%	---	---	50%	50%	50%	50%	50%	50%	
Applicant share:	---	---	\$ 3,299	\$ 2,190	\$ -	\$ 85,550	\$ -	\$ -	
FSP Share:	---	---	\$ 3,299	\$ 2,190	\$ -	\$ 85,550	\$ -	\$ -	
Year 5 Applicant total:	\$	91,038.75							\$91,038.75

Year 6 (2026)									
Fence maintenance	382	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Brush management	314	\$ 150	\$ -	\$ -	\$ -	\$ -	\$ 8,850	\$ -	\$ -
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ -	\$ -	\$ 162,250	\$ -	\$ -
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ 35,020	\$ 26,095	\$ 15,810	\$ 136,170	\$ -
Year subtotal:	---	---	\$ 6,598	\$ -	\$ 35,020	\$ 197,195	\$ 15,810	\$ 136,170	\$ -
NRCS%	---	---	50%	50%	50%	50%	50%	50%	50%
Applicant share:	---	---	\$ 3,299	\$ -	\$ 17,510	\$ 98,598	\$ 7,905	\$ 68,085	\$ -
FSP Share:	---	---	\$ 3,299	\$ -	\$ 17,510	\$ 98,598	\$ 7,905	\$ 68,085	\$ -
Year 6 Applicant total:	\$	195,396.25						\$195,396.25	
Year 7 (2027)									
Fence maintenance	382	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Brush management	314	\$ 150	\$ -	\$ -	\$ -	\$ -	\$ 9,150	\$ -	\$ -
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ -	\$ -	\$ 167,750	\$ -	\$ -
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Year subtotal:	---	---	\$ 6,598	\$ -	\$ -	\$ -	\$ 176,900	\$ -	\$ -
NRCS%	---	---	50%	50%	50%	50%	50%	50%	50%
Applicant share:	---	---	\$ 3,299	\$ -	\$ -	\$ -	\$ 88,450	\$ -	\$ -
FSP Share:	---	---	\$ 3,299	\$ -	\$ -	\$ -	\$ 88,450	\$ -	\$ -
Year 7 Applicant total:	\$	91,748.75						\$91,748.75	
Year 8 (2028)									
Fence maintenance	382	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Brush management	314	\$ 150	\$ -	\$ -	\$ -	\$ -	\$ 9,150	\$ -	\$ -
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ -	\$ -	\$ 50,325	\$ -	\$ -
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Year subtotal:	---	---	\$ 6,598	\$ -	\$ -	\$ -	\$ 59,475	\$ -	\$ -
NRCS%	---	---	50%	50%	50%	50%	50%	50%	50%
Applicant share:	---	---	\$ 3,299	\$ -	\$ -	\$ -	\$ 29,738	\$ -	\$ -
FSP Share:	---	---	\$ 3,299	\$ -	\$ -	\$ -	\$ 29,738	\$ -	\$ -
Year 8 Applicant total:	\$	33,036.25						\$33,036.25	
Year 9 (2029)									
Fence maintenance	382	\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Brush management	314	\$ 150	\$ -	\$ -	\$ -	\$ -	\$ 5,475	\$ -	\$ -
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ -	\$ -	\$ 30,113	\$ -	\$ -
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ 35,020	\$ 26,095	\$ 15,810	\$ 136,170	\$ -
Year subtotal:	---	---	\$ 6,598	\$ -	\$ 35,020	\$ 26,095	\$ 51,398	\$ 136,170	\$ -
NRCS%	---	---	50%	50%	50%	50%	50%	50%	50%
Applicant share:	---	---	\$ 3,299	\$ -	\$ 17,510	\$ 13,048	\$ 25,699	\$ 68,085	\$ -
FSP Share:	---	---	\$ 3,299	\$ -	\$ 17,510	\$ 13,048	\$ 25,699	\$ 68,085	\$ -
Year 9 Applicant total:	\$	127,640.00						\$127,640.00	
Year 10 (2030)									
Fence maintenance	382	\$ 1,500	\$ -	\$ 4,380	\$ -	\$ -	\$ -	\$ -	\$ -
Fuelbreak maintenance	383	\$ 175	\$ 6,598	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Brush management	314	\$ 150	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Tree estab. (250 tpa)	612	\$ 2,750	\$ -	\$ -	\$ -	\$ -	\$ 30,113	\$ -	\$ -
Integrated pest mgmt.	595	\$ 85	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Year subtotal:	---	---	\$ 6,598	\$ 4,380	\$ -	\$ -	\$ 30,113	\$ -	\$ -
NRCS%	---	---	50%	50%	50%	50%	50%	50%	50%
Applicant share:	---	---	\$ 3,299	\$ 2,190	\$ -	\$ -	\$ 15,056	\$ -	\$ -
FSP Share:	---	---	\$ 3,299	\$ 2,190	\$ -	\$ -	\$ 15,056	\$ -	\$ -
Year 10 Applicant total:	\$	20,545.00						\$20,545.00	

For the budget and schedule, Tree establishment and brush management is for the planting areas featured in Table 14. Proposed planting acreage in Zone A by 2- year interval (Map of areas: Figure 22). They are a subset of the FMU's and the exact acreage was used to calculate the budget.

7.2. Schedule

Activity	NRCS code	Year	Field					Zone 2
			Firebreaks	HA fence	A1	A2	A3	
Year 1 (2021)								
Fence maintenance	382	2021						
Fuelbreak maintenance	383	2021						
Brush management	314	2021						
Tree estab. (250 tpa)	612	2021						
Integrated pest mgmt.	595	2021						
Year 2 (2022)								
Fence maintenance	382	2022						
Fuelbreak maintenance	383	2022						
Brush management	314	2022						
Tree estab. (250 tpa)	612	2022						
Integrated pest mgmt.	595	2022						
Year 3 (2023)								
Fence maintenance	382	2023						
Fuelbreak maintenance	383	2023						
Brush management	314	2023						
Tree estab. (250 tpa)	612	2023						
Integrated pest mgmt.	595	2023						
Year 4 (2024)								
Fence maintenance	382	2024						
Fuelbreak maintenance	383	2024						
Brush management	314	2024						
Tree estab. (250 tpa)	612	2024						
Integrated pest mgmt.	595	2024						
Year 5 (2025)								
Fence maintenance	382	2025						
Fuelbreak maintenance	383	2025						
Brush management	314	2025						
Tree estab. (250 tpa)	612	2025						
Integrated pest mgmt.	595	2025						
Year 6 (2026)								
Fence maintenance	382	2026						
Fuelbreak maintenance	383	2026						
Brush management	314	2026						
Tree estab. (250 tpa)	612	2026						
Integrated pest mgmt.	595	2026						
Year 7 (2027)								
Fence maintenance	382	2027						
Fuelbreak maintenance	383	2027						
Brush management	314	2027						
Tree estab. (250 tpa)	612	2027						
Integrated pest mgmt.	595	2027						
Year 8 (2028)								
Fence maintenance	382	2028						
Fuelbreak maintenance	383	2028						

Brush management	314	2028						
Tree estab. (250 tpa)	612	2028						
Integrated pest mgmt.	595	2028						
Year 9 (2029)								
Fence maintenance	382	2029						
Fuelbreak maintenance	383	2029						
Brush management	314	2029						
Tree estab. (250 tpa)	612	2029						
Integrated pest mgmt.	595	2029						
Year 10 (2030)								
Fence maintenance	382	2030						
Fuelbreak maintenance	383	2030						
Brush management	314	2030						
Tree estab. (250 tpa)	612	2030						
Integrated pest mgmt.	595	2030						

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9. Appendices

9.1. Appendix A: FOREST INVENTORY