

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

May 12, 2023

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

Land Board Members:

SUBJECT: REQUEST APPROVAL TO AUTHORIZE THE CHAIRPERSON TO NEGOTIATE AND ENTER INTO A MEMORANDUM OF UNDERSTANDING WITH HAWAII AGRICULTURE RESEARCH CENTER FOR COOPERATIVE FORESTRY MANAGEMENT IN THE STATE OF HAWAII

SUMMARY

DLNR and the Hawaii Agriculture Research Center (HARC) are both independently committed to developing forestry management practices and techniques that will increase forest cover in the State of Hawaii. The DLNR has outlined these commitments in the 2016 State Forest Action Plan and other documents. The purpose of this Memorandum of Understanding (MOU) is to record the commitments of the DLNR and the HARC (collectively, "the parties") to collaborate on forestry management actions, the types of potential forestry management actions the parties may work on, and outline the roles and responsibilities each party may have.

Cooperative forestry practices between DLNR and HARC could include but are not limited to: the development of genetically enhanced seed materials using conventional tree breeding techniques, creation and management of seed orchards, nursery services and production, silvicultural treatments such as site preparation or thinning operations, and/or creation and management of agroforestry sites. Both parties have a special interest in the cooperative management of seed orchards, and the access to, and distribution of, materials from these seed orchards.

The attached draft MOU document (exhibit A) has been reviewed and accepted by HARC staff and the Attorney Generals' office.

## BACKGROUND

Hawai'i's forests are essential for sustaining clean and abundant water, providing habitat for native plants and animals, sequestering greenhouse gases, and providing recreational, cultural, and commercial opportunities to residents. There are approximately 1.4 million acres of forested land in the state, but there is ample opportunity to restore and increase forest coverage in many areas currently left fallow or covered in non-native shrubs and grasslands. Many forest areas are currently degraded by invasive species. If restored with native tree species, or commercially viable tree species where appropriate, these areas could provide increased natural and cultural resources and better commercial opportunities.

The DLNR and HARC agree that the people and environment in Hawai'i would benefit from increased forest and tree cover across the State. To achieve this, it is necessary for long-term reforestation, conservation of native tree species and ecosystems, and the development of responsible forest-related commercial activities to occur. Both parties agree that more support for forestry practices, such as researching the materials and methods used for reforestation, is needed. Additionally, both parties agree that creating and managing the infrastructure needed for reforestation is needed. Therefore, it will be beneficial to the parties, and the State of Hawai'i, for DLNR and HARC to collaborate on appropriate forestry management practices.

## ANALYSIS

The DLNR has duties to “devise ways and means of protecting, extending, increasing, and utilizing the forests and forests reserves” and “devise and carry into operation, ways and means of reforesting suitable lands.” HRS § 183-1.5(4) and (6). The DLNR, as the head of DLNR, may delegate to the chairperson “powers and duties as may be lawful or proper for the performance of the functions vested in the board[.]” HRS § 171-6(8).

This document outlines potential cooperative management actions and outlines specific objectives for the management of seed orchards. Historically, the parties have collaborated on the cooperative management and creation of seed orchards, specifically for the purposes of cultivating appropriate koa (*Acacia koa*) seeds and materials for use in reforestation and forestry practices. A major focus of these orchards has been finding and selecting trees that have a natural resistance to the disease koa wilt. Koa wilt causes high rates of mortality in field plantings and threatens native koa forests. It severely restricts the range of koa, especially causing widespread mortality of koa trees in lower-elevation environments. Koa wilt is caused by the fungal pathogen *Fusarium oxysporum* f. sp. *koae* (FOXY). By implementing a tree improvement program that screens and tests for natural resistance to FOXY, land managers can cultivate the koa-wilt resistant seedlings that will allow for outplanting and reforestation in areas where non-FOXY resistant koa trees would likely be unable to grow.

Cooperative management between DLNR and HARC on the development and management of koa orchards has been an ongoing, mutually beneficial collaborative practice. One purpose of this MOU is to formally outline how funding for the development of orchards is secured, which party manages the seed orchard, and each party's ability to access materials from a seed orchard based on its location and management

Besides outlining the specifics of managing koa seed orchards, this MOU will also highlight future collaborative forestry practices and document specifics of cooperative management of other types of seed orchards, such as those for cultivating seeds for sandalwood (*Santalum* sp.) and other tree species in the future.

### RECOMMENDATIONS

That the Board of Land and Natural Resources:

1. Authorize the Chairperson to enter into a Memorandum of Understanding between the Department of Land and Natural Resources and the Hawai'i Agriculture Research Center for cooperative forestry management in the State of Hawai'i.
  - A. The terms and conditions of the attached MOU document, as may be amended;
  - B. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.

Respectfully submitted



---

DAVID G. SMITH, Administrator  
Division of Forestry and Wildlife

APPROVAL FOR SUBMITTAL:



---

DAWN N.S. CHANG, Chairperson

Attachments:

Exhibit A: Draft Memorandum of Understanding between DLNR and HARC for Cooperative Forestry Management in Hawai'i

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE STATE OF HAWAI‘I DEPARTMENT OF  
LAND AND NATURAL RESOURCES

AND

HAWAI‘I AGRICULTURE RESEARCH CENTER

FOR COOPERATIVE FORESTRY MANAGEMENT IN HAWAII

**I. Purpose**

The purpose of this Memorandum of Understanding (MOU) is to record the commitment to future collaboration possibilities between the State of Hawai‘i, Department of Land and Natural Resources (DLNR) and the Hawai‘i Agriculture Research Center (HARC) (collectively, “the parties”). This MOU documents potential forestry management actions that the parties may collaborate on and outlines the roles and responsibilities each party may have.

Cooperative forestry practices between DLNR and HARC could include but are not limited to: the development of genetically enhanced seed materials using conventional tree breeding techniques, creation and management of seed orchards, nursery services and production, silvicultural treatments such as site preparation or thinning operations, and/or creation and management of agroforestry sites.

**II. Background**

Hawai‘i’s forests are essential for sustaining clean and abundant water, providing habitat for native plants and animals, sequestering greenhouse gases, and providing recreational, cultural, and commercial opportunities to residents. There are approximately 1.4 million acres of forested land in the state, but there is ample opportunity to restore and increase forest coverage in many areas currently left fallow or covered in non-native shrubs and grasslands. Many forest areas are currently degraded by invasive species. If restored with native tree species, or commercially viable tree species where appropriate, these areas could provide increased natural and cultural resources and better commercial opportunities.

The DLNR and HARC agree that the people and environment in Hawai‘i would benefit from increased forest and tree cover across the State. To achieve increased forest and tree cover, it is necessary for long-term reforestation, conservation of native tree species and ecosystems, and the development of responsible forest-related commercial activities to occur. Both parties agree that more support for forestry practices, such as researching the materials and methods used for reforestation, is needed. Additionally, both parties agree that creating and managing the infrastructure needed for reforestation is needed. Therefore, it will be beneficial to the parties,

and the State of Hawai‘i, for DLNR and HARC to collaborate on appropriate forestry management practices.

### **III. Objectives**

The objectives of this MOU are to: a) establish effective collaboration and coordination between DLNR and HARC; b) establish the roles and responsibilities of DLNR and HARC in forestry management; c) minimize duplication of effort; d) establish when to work with other stake holders for research and implementation; and e) implement forestry practices that are beneficial to Hawai‘i’s forests.

#### Management of Seed Orchards.

DLNR and HARC may cooperatively manage seed orchards. The seed orchards are meant to provide genetically improved planting seeds for reforestation and commercial forestry. Genetically improved traits can include a natural resistance to invasive species or diseases, or desirable commercial characteristics, such as straight growth form. These seeds are vital to meet the needs of DLNR’s reforestation goals and improving forestry practices statewide. Multiple seed orchards across different habitats and ecosystems are needed to ensure the genetic diversity of native species is maintained for widescale reforestation to be successful.

#### Work Plans.

DLNR and HARC may jointly manage seed orchards in four districts- Kaua‘i, Oahu, Maui, and Hawai‘i. District-specific work plans shall be developed for each of the four districts. These work plans will document the locations of all seed orchards, planned management actions, seed collection, the responsible parties, and expected production or timeline of these seed orchards among other information. An example of a work plan can be seen in Appendix A.

#### Distribution of Materials (Seeds, Cuttings, etc.).

Pursuant to the collaborative operation and management of seed orchards, DLNR and HARC will share the materials created from these operations. Materials include, but are not limited to, seeds, seedlings, and cuttings. The distribution of these materials will depend on the location of the orchard and the management done by each party, as discussed below.

In general, three scenarios of seed orchard management are expected:

- 1) Orchards located on DLNR land, managed or jointly managed by HARC.  
If DLNR land is utilized for a seed orchard and is managed by HARC entirely or jointly between DLNR and HARC, both parties are entitled to fifty percent (50%) of the seeds, by weight, and 50% of other propagule materials generated each calendar year.  
If one party would like to utilize more than fifty percent (50%) of the materials from that site, they may do so after notifying in writing the designated representative from the other party and receiving written approval from the other party.
- 2) Orchards that are located on privately owned lands, where DLNR contracts HARC for assistance in managing the seed orchard.  
In the case where HARC is contracted by DLNR to assist in the creation or management

of a seed orchard on privately owned lands, the right to materials from these seed orchards will be agreed upon by DLNR and the private landowner in a separate agreement.

3) Orchards located on privately owned land, which are privately funded, and HARC-managed or operated, where public funds managed by DLNR have been used at some stage of the Orchard development.

If DLNR contributes public funds to the development of improved seed that is utilized on orchards operated by HARC located on privately owned, privately funded land, DLNR may be entitled to some of the seed or other materials created from these orchards. The purpose of DLNR obtaining seed from these orchards will be to ensure this material can be utilized for public benefits, which may include reforestation on State lands and/or ensuring the seed and/or seedlings from a geographic area are available to the public. HARC will ensure that some material from such orchards is either provided to the State or incorporated for further tree improvement through breeding.

#### IV. Other Provisions

- A. **Notices.** Any communications affecting the operations covered by this MOU given by any party must be in writing and delivered in person, mailed, or transmitted electronically by e-mail or fax, to the principal contact of each party in Part V of this MOU. Notices are effective on the date delivered or on the effective date of the notice, whichever is later.
- B. **Participation in Similar Activities.** This MOU in no way restricts the parties from participating in similar activities with other public or private agencies, organizations, and individuals.
- C. **Endorsement.** Any party's contribution(s) made under this MOU does not, by direct reference or implication, convey endorsement of any party's products or activities.
- D. **Nonbinding Agreement.** This MOU creates no right, benefit, or trust responsibility, substantive or procedural, enforceable by law or equity. This MOU does not obligate any DNLR or HARC funds. The parties shall manage their respective resources and activities in a separate, coordinated, and mutually beneficial manner to achieve the objectives(s) of this MOU.
- E. **Other Agreements.** Specific, prospective projects or activities that involve the transfer of funds, services, property, and/or anything of value to a party requires the execution of separate agreements and are contingent upon numerous factors, including but not limited to: federal agency availability of appropriated funds and other resources; state agency availability of appropriated and allocated funds and other resources; and federal and state agency administrative and legal requirements (including agency authorization by statute). This MOU neither provides nor meets these criteria. If the parties elect to enter into an obligation agreement that involves the transfer of funds, services, property, and/or

anything of value to other party, then the applicable criteria must be met. Additionally, under a prospective agreement, each party operates under its own laws, regulations, and/or policies, and any party/agency obligation is subject to the availability of appropriated funds and other resources. The negotiation, execution, and administration of these prospective agreements must comply with all applicable law.

- F. **Statutory and Regulatory Authorities.** This MOU does not alter, limit, or expand the statutory and regulatory authority and responsibilities of either party.
- G. **Acknowledgement in Publications, Audiovisuals, and Electronic Media.** In any publications, audiovisuals, and/or electronic media developed regarding collaborative work done pursuant to this MOU, the parties shall acknowledge each other's support and contribution(s).
- H. **Termination.** The MOU may be terminated at any time by mutual consent of DLNR and HARC at any time before the Termination Date. Additionally, the MOU may be terminated by either party alone by giving thirty (30) days written notice to the other in a written termination agreement.
- I. **Modifications.** The MOU may be amended within the scope of the objectives of the MOU. Amendments to the MOU must be made by mutual consent of the parties, in writing, signed and dated prior to any implementation of the amendments, and attached to the MOU as an addendum.  
Either party may make a request for amendments. Such request should be in writing and made at least thirty (30) days prior to the implementation of the requested amendment(s).
- J. **Termination Date.** The MOU will terminate five (5) years from the execution date (Termination Date). The MOU may be extended an additional five (5) years if the parties mutually consent in a signed and dated addendum of the MOU (Extended Termination Date). Once fully executed, the MOU is effective until it is terminated by the parties, the Termination Date, or the Extended Termination Date.

V. **Principal Contacts of the Parties**

The individuals listed below are authorized to act in their respective areas for matters related to this agreement. In the event that the individual listed has left their respective organization prior to the termination of the MOU, the individual may be replaced by whoever has replaced such individual in their professional role.

Department of Land and Natural Resources  
State of Hawai'i  
Chairperson of the Board of Land and Natural Resources Dawn N.S. Chang  
1151 Punchbowl Street  
Honolulu, Hawaii 96813  
(808) 587-0400

Department of Land and Natural Resources  
Division of Forestry and Wildlife  
Administrator David G. Smith  
1151 Punchbowl Street, Room 325  
Honolulu, Hawaii 96813  
(808) 587-0166

Hawaii Agriculture Research Center  
Executive Director Stephanie A. Whalen  
P.O. Box 100  
Kunia, HI 96759  
(808) 621-1350

Hawai'i Agriculture Research Center  
Senior Forester Nicklos Dudley  
P.O. Box 100  
Kunia, HI 96759  
(808) 391-5421

IN WITNESS WHEREOF, the Parties agree to this MOU and signify such agreement by their signatures below effective the date of the last signature.

FOR HAWAI'I AGRICULTURE RESEARCH CENTER:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name and Title

FOR STATE OF HAWAI'I – DEPARTMENT OF LAND AND NATURAL RESOURCES:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name and Title

## APPENDIX A

### Example Annual Work Plan for Seed Orchard Management between DLNR and HARC

- 1) District: (*Kaua 'i, Oahu, Maui, Hawai 'i*)
- 2) Year(s):
- 3) District Summary: (*Quantity of orchards, previous years actions/managements, overall needs, etc.*)
- 4) For each orchard within this district please provide the following information:

#### Orchard 1

- a. Location
- b. Type of Plant (*Koa, Sandalwood, other*)
- c. Land Owner (*DLNR, HARC, private*)
- d. Current Phase
- e. Responsible organization for management, expected management
- f. Expected materials (*seed quantity, etc.*) and/or expected years until seed availability
- g. Funding or other support needed

#### Orchard 2

- a. Location
- b. Type of Plant (*Koa, Sandalwood, other*)
- c. Land Owner (*DLNR, HARC, private*)
- d. Current Phase
- e. Responsible organization for management, expected management
- f. Expected materials (*seed quantity, etc.*) and/or expected years until seed availability
- g. Funding or other support needed