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Hawai'i Forest Journal

A Publication for Environmental Stewardship

History of Forestry in Hawai'i: An Overview

By Travis Idol, Associate Professor, Natural Resources and Environmental Management, University of Hawai'i-Mānoa, and HFI President

Hawaii's plant and animals species are unique, with more than 90% occurring naturally nowhere else on earth. Similarly, the forests of Hawai'i represent unique ecosystems that span a broad range of life zones. Still, the ecosystem services Hawaii's forests provide are the same as forests anywhere: habitat for plants and animals, watershed protection and regulation, timber and non-timber forest products, recreational opportunities, and connection to the cultural and spiritual lives of the people.

Thus, the history of forest exploitation, conservation, and restoration in Hawai'i is both unique and familiar to those with a background in forestry. Our small island setting amplifies the contribution of healthy forests to ecosystem services like regulation of the water cycle and provision of critical habitat for threatened and endangered species. At the same time, they are especially vulnerable to unsustainable exploitation, invasion of non-native species, and the ravages of uncontrolled grazing, which has caused our reputation as both the endangered species and extinction capital of the world.

The efforts undertaken over the years to address the challenges of forest conservation, restoration, and sustainable use in Hawai'i are a microcosm of issues being faced around the world. Hawai'i was fortunate enough to be chosen as the location for the 2011 annual convention of the Society of American Foresters. At the same time, the United Nations declared 2011 the International Year of the Forest. We at the Hawai'i Forest Institute felt this convergence of events was the optimal time to revisit the history of forestry in Hawai'i to give others the chance to learn about our unique and familiar challenges and opportunities.

In keeping with Hawaiian traditions, we sought out the wisdom of the *kupuna* in Hawaii's forestry community to gather the information for these articles. We talked story with a number of forestry professionals representing academia, the US Forest Service, the State Division of Forestry and Wildlife, the Hawai'i Forest Industry Association, the Department of Hawaiian Homelands, Kamehameha Schools, and private consultants. Together with published information, this resulted in more material than we could hope to share

▸ A giant koa (Acacia koa) tree in the Hakalau Forest Refuge. Photo: J.B. Friday.

▲ View of Mānoa Valley, O'ahu in the early 1920's. Photo: Courtesy Harold L. Lyon Arboretum.

in a single issue of the journal, so the articles printed here represent a mere introduction to the rich and important history of forestry in Hawai'i. To address this deficiency, we have included references to the published material. Our goals are to reflect on our past, provide valuable lessons for ourselves and others, and continue the good work of promoting healthy forests and sustainable forestry in Hawai'i, the United States, and the international community.

▲ Old koa logs at Keauhou Forest, Hawai'i Island. Photo: J.B. Friday.

▲ Diverse native understory in a restored koa forest, Hawai'i Island. Photo: Travis Idol.

Hawaii's Forest Lands and Landowners

By: Darcey Iwashita, Graduate Student, Natural Resources and Environmental Management, College of Tropical Agriculture and Human Resources, University of Hawai'i at Mānoa

The ecosystem services that forests provide have influenced land ownership since the arrival of the first Polynesians, and they continue to play an important role in land ownership today. Conversely, important eras, events, and legislation have shaped Hawaii's lands and forest protection over time.

Land management under the ruling *ali'i* and monarchy

Traditional *ali'i* (chiefs) were the first rulers of land in Hawai'i. Land during this time was divided into *moku* (districts) and then into smaller *ahupua'a,* which were land divisions that extended from the uplands to the ocean and were characterized by elaborate irrigation systems. Small cultivated areas were located primarily in the lowlands, which were extensively cleared for agriculture. The upper forests were left relatively untouched, as they were integral to the functioning of the *ahupua'a* due to the water they provided to the lowlands. These upland forests were considered *wao akua* ("realm of the gods") and were therefore protected by *kapu.* The *maka'āinana* (commoners) who cultivated the land had no ownership over any of the land's resources, but by paying taxes to the *konohiki* steward (of the *ahupua'a*), they secured fairly stable land tenure.

▲ Fenceline showing koa regeneration after scarification, Umikoa Ranch, Hawai'i Island. Photo: Travis Idol.

Between 1795 and 1810, King Kamehameha unified Hawai'i under his rule. Land continued to be managed within each *ahupua'a* and by the *kapu* system. In the 1830s, however, the land tenure system began to change, culminating in the Great Mahele in 1848, which ended the traditional land tenure system and introduced private land ownership.

By the 1830s, forested lands were already in decline. The sandalwood trade had reduced sandalwood populations to such an extent that in 1839, Hawaii's first forestry law restricted the harvest of sandalwood. Cattle, which had been introduced in the late 1700s, continued to cause widespread destruction of native forests. With the breakdown of the *kapu* system that began after King Kamehameha's death in 1819, koa (*Acacia koa*) trees were indiscriminately harvested. Recognizing that the future of Hawai'i relied heavily on its forests, King Kamehameha III placed forests under government ownership in 1846. That same year, the King and the Board of Commissioners began the process of land division, primarily to appease the growing number of entrepreneurs who wanted land guarantees.

The Great Mahele and private land ownership

Under the new system of land ownership that resulted in the Great Mahele in 1848, roughly one-third of the land was reserved for the crown, one-third for the government, and one-third for the ruling *ali'i*. Only a small portion of the lands were still owned by the *maka'āinana*. Both the crown lands and the government lands were intended to serve the Hawaiians in perpetuity, while the land for the ruling *ali'i* could be sold or traded—that is, privatized. The *ahupua'a* system of watershed management began to break down as private landowners could do what they wished with their lands, irrespective of the role it played in the watershed. Most of the newly privatized lands

were used primarily for the sugar and cattle industries, which both expanded under this new land ownership system. The 1875 Reciprocity Treaty between Hawai‘i and the United States, which allowed for the duty-free sugar importation into the United States, also encouraged the growth of the sugar industry and its plantations. Private lands soon were consolidated under only a handful of landowners (primarily for the sugar and ranching industries), and by 1890, 75% of private lands were owned by non-Hawaiians. The new land divisions, which had aimed to secure the welfare of the Hawaiians in perpetuity, in effect disenfranchised many of them, and their populations declined as a result of homelessness, hunger, and diseases that were introduced to the islands.

What did these changes in land tenure mean for the forest? First, the booming sugar industry resulted in the clearing of lands and the extraction of resources from the forest, including water for irrigation. As the sugar industry grew, cities began to grow with it, and immigrants began arriving to work on the sugar plantations, placing more pressure on forest resources. Meanwhile, feral cattle from unfenced ranches continued to destroy the forests. Action to stop deforestation, however, did not begin in earnest until the 1870s, when botanists and sugar industry leaders began to reforest the upland slopes, fence the remaining forests, and eradicate cattle, sheep, and goats. In 1876, the Act for the Protection and Preservation of Woods and Forests was passed, in which areas of forest were set aside and protected by the government. Forested lands were further protected by a change in the tax laws in 1892, whereby private landowners received an exemption from property taxes on land managed for forest cover.

Public-private land partnerships from Statehood to present

In 1893, the Hawaiian monarchy was overthrown and succeeded by a Provisional government, resulting in another drastic change to forested lands and land ownership in Hawai‘i. With the annexation of Hawai‘i by the US in 1898, the federal government began to take an active role in land ownership and forest protection. Both the ceded lands appropriated from the government and the crown lands became the property of the federal government, but were administered by the Territory of Hawai‘i. About two-thirds of the ceded lands became what is now Hawai‘i Volcanoes National Park and Haleakala National Park, thus providing considerable forest protection.

▲ Dr. J.B. Friday, University of Hawai'i Extension Forester (L), and ranch manager David Matsuura discuss management of young koa stands in former pasture. Photo: Travis Idol.

Meanwhile, the sugar industry, still concerned about water shortages due to cattle activity in forests, achieved success with the passing of Act 44 in 1903—a critical paradigm shift in forest management. With Act 44 came the establishment of a forest reserve system, which instituted partnerships between public and private landowners to protect forests. Due to the cooperation between public and private landowners, and another tax break for conservation of forests on private land in 1909, large scale reforestation, fencing and feral ungulate eradication efforts occurred across the islands. The forests were transformed during this time, as millions of trees of nonnative species were planted throughout the islands. By 1930, a million acres of land—nearly 25% of Hawaii's land area—were in the Forest Reserve System.

Partnership protection of forested lands was successful, and although there was a decline in conservation efforts during World War II, the years following the war saw the establishment of the State Parks system (1954) and increased recreational use of forests. However, during the post-war boom, development became a priority for Hawai'i, resulting in changes to tax policy. A policy was enacted in which each property's value was determined by the property's highest potential monetary return. Thus property taxes increased, and landowners were forced to develop their land to avoid paying these higher taxes. At the expense of the forest, grazing was a popular way to develop land at a low cost, as landowners could build a fence and let the cattle out into the forest.

One of the most significant laws in recent history that changed forested land management in Hawai'i was 1961's Act 187, the Land Use Law (commonly called the "green belt" law), which divided Hawaii's lands up into three different zones or districts: urban, agricultural, and conservation. The forest reserves were renamed as conservation districts. Originally meant to protect agricultural land, the law regulated land development and use on both public and private lands, including large areas of forested land that remain protected as conservation districts to the present day. Further protection for forests came in 1970 with the establishment of the statewide Natural Area Reserves System, which aimed to protect Hawaii's unique biota in state-owned lands.

Between 1961 and 1970, reforestation efforts were initiated by a growing timber industry eager to supply wood products. The Endangered Species Act (ESA) of 1973 could have potentially caused a negative effect on commercial forestry, as the guidelines stipulated in the new federal law made management for timber difficult, particularly by placing financial burdens on private landowners, who would have to protect endangered species on their property. Federal and state partnership programs, including the Natural Area Partnership Program, the Forest Legacy Program, and the Forest Stewardship Program were soon established to provide economic incentives for conservation on privately owned lands. For example, the Forest Legacy Program's main goal is to prevent private forested land conversion to non-forest use by providing conservation easements and tax benefits for private landowners.

Under the Hawai'i Association of Watershed Partnership, 11 individual watershed partnerships have emerged across the islands, demonstrating that public-private partnerships will be a key strategy in forest protection for years to come.

Over time, conflicting demands from various stakeholders have become a challenge for the protection of forested lands. Landowners and federal and state agencies often work independently to manage lands based on their own mandates or priorities. With the inception of watershed partnerships in 1991, the old model of public-private partnerships that began with the forest reserve system in 1903 was revitalized to meet the needs of each specific partnership and the land itself. Under the Hawai'i Association of Watershed Partnership, 11 individual watershed partnerships have emerged across the islands, demonstrating that public-private partnerships will be a key strategy in forest protection for years to come.

Partnerships for Watershed Management

By Darcey Iwashita

"Public-private partnerships are essential to the conservation of forest resources" – Liba Pejchar and Daniel M. Press[1]

Forest ecology, hydrology, silviculture, timber production, hunting, wildlife, culture, biodiversity, fire, pests and diseases, ranching, economics, recreation: these are among the many fields and concerns that land managers must take into account when planning for the future of Hawaii's forests and watersheds. As far back as 1971, the Division of Forestry wrote "Most problems are multidisciplinary….We see that social and economic questions as well as biological ones need answers." These answers, like the problems themselves, must also be multidisciplinary.

A key strategy for watershed management that addresses these diverse challenges is the public-private partnership, which has been used in Hawai'i since the early 20th century. These partnerships involve collaboration between multiple agencies, organizations, and private landowners to conserve both natural and cultural resources in a manner that is beneficial to all stakeholders. The history of watershed management in Hawai'i reveals a unique spirit of cooperation and community that has helped protect Hawaii's forests through time.

▲ Mānoa-1918: Mānoa Valley in 1918.
Photo: Courtesy Hawai'i Agriculture Research Center.

Sugar, Water, and the Forest Reserve System

The first public-private watershed partnerships were formed between the Territorial government and sugar planters in 1904, when sugar dominated the economy in Hawai'i. The sugar industry had been lobbying for forest protection since the late 1800s, as the cattle grazing and denudation of upland forests threatened the water supply critical to sustaining sugar plantations and the sugar economy. Thus, the primary goal of these first public-private partnerships, which began with the creation of the Territorial Forest Reserve System in 1904, was to protect the water supply of middle and high elevation forests. Forest Reserves were established on Kaua'i, O'ahu, Maui, Moloka'i, and Hawai'i Island. Under the forest reserve system, all government lands that were believed to be important for water recharge were set aside as reserves. Ralph S. Hosmer, the first Territorial forester under the newly formed Division of Forestry made it clear that water was "the principal product" of the reserves. In addition, the forest reserve system was designed to avoid lands for commercial use, and therefore did not interfere with sugar plantation lands. Thus both conservation of water supply and continued economic growth were made possible under these public-private partnerships.

Because the forest reserve system was dedicated to protecting upland forest areas on both public and private lands, sugar planters and other private landowners could now turn over their forested lands via "surrender agreements" to the Territory to manage. Fencing, feral animal eradication, and reforestation were the main conservation activities performed on the reserves. Often trees that had no timber value, such as *Ficus* spp. and *Acacia confusa*, were planted to preclude harvesting, although koa (*Acacia koa*) continued to be planted with nonnative species. Low success in planting native species led to experimentation with nonnative species to reforest denuded slopes. Harold Lyon[2], the plant pathologist for the Hawai'i Sugar Planters' Association and Director of the new Department of Botany and Forestation for the Territory in the early 1900s, believed native trees performed too poorly in general. *Eucalyptus* species (*E. robusta* in particular), silk oak (*Grevillea robusta*), paperbark (*Melaleuca quinquenervia*), and ironwood (*Casuarina* spp.) were the most frequently planted trees due to their fast growth and their resistance to adverse environmental conditions. However, these very qualities, as well as their ability to seed profusely, would lead to some species such as tropical ash (*Fraxinus uhdei*) and albizia (*Falcataria moluccana*) invading native forests and creating problems further down the road.

By 1930, 25% of all lands were in the forest reserves. Conservation practices on the reserves hit a peak in the 1930s, during which more than 100,000 feral animals were eradicated and 12.5 million trees were planted by the Civilian Conservation Corps. These numbers dropped considerably during World War II, and in the 1960s many private landowners withdrew their lands from the forest reserves due to the advent of zoning laws. A new partnership system emerged to meet the challenge of watershed management.

Hawai'i Division of Forestry Partnerships

As early as 1926, the USDA Forest Service financially supported the Territorial government's reforestation efforts to protect the water supply. As the trees planted in early reforestation efforts began to reach maturity in the mid-1950s, the Division of Forestry recognized the need to develop a watershed management plan that included multiple uses of forest resources, particularly for timber production.

A partnership between the USDA Forest Service and the Division of Forestry was formed in 1957, resulting in the Forest Research Program (what is now the Institute of Pacific Islands Forestry). Activities included an inventory of forest resources as well as research on forest products, economics, timber management, watershed management, silviculture, fire control, and forest disease. In addition, private landowners such as Kamehameha Schools worked with state and federal foresters to evaluate the economic potential of Hawai'i timber. In 1964, the Forest Service and Division of Forestry (now the Division of Forestry and Wildlife (DOFAW)) continued their partnership under the Cooperative Forest Management

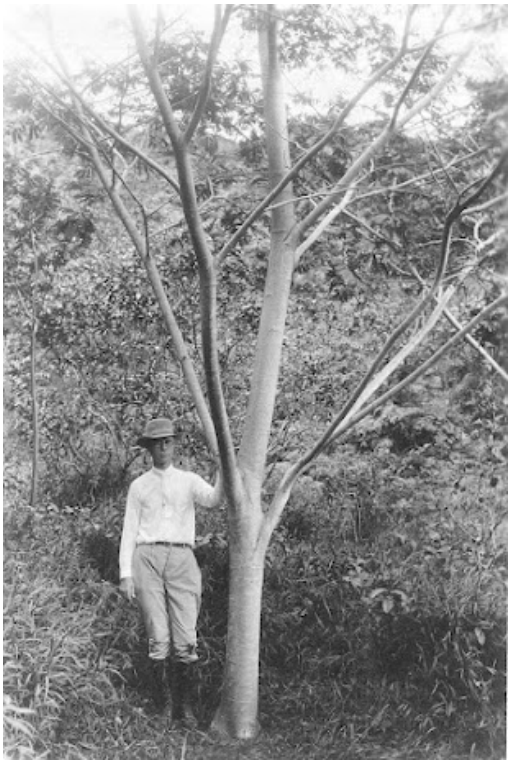
▲ Tantalus Forest. Mixed native and introduced forest along Mānoa Cliffs Trail, Mānoa, O'ahu, Hawai'i. Photo: J.B. Friday.

Program, which provided increased technical assistance to private landowners interested in developing their land for local wood products. Under these partnerships, the scope of watershed management expanded to include not only a safe water supply, but also a viable economic and ecologically sound future for forestry in Hawai‘i.

Partnerships between private landowners and DOFAW continue today under programs such as the Hawai‘i Forest Stewardship Program and the Natural Areas Partnership Program, which provide technical and financial assistance to private landowners to help them protect and restore their forested lands. The Department of Forestry and Wildlife also participates in several other partnerships, including the Hawai‘i Invasive Species Council, the Hawai‘i Forest Legacy program, and the Hawai‘i Association of Watershed Partnerships.

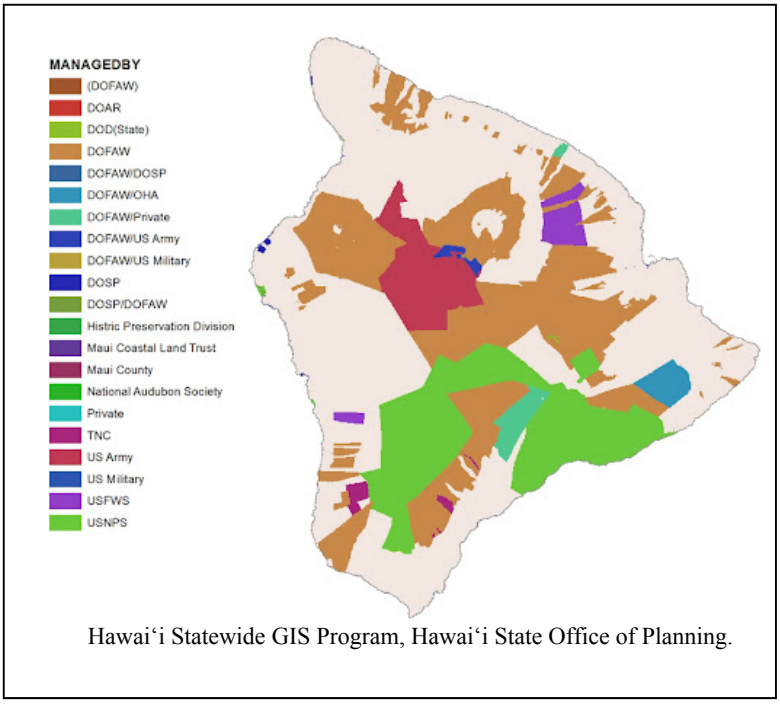
Watershed Partnerships

Today, more than 2.2 million acres of forest are protected by 11 individual watershed partnerships on the six main Hawaiian Islands, each managed by a voluntary alliance of public and private landowners. While the earliest watershed partnership (East Maui) was created in 1991, its foundation had been laid nearly 90 years earlier by Hosmer and the forest reserve system. Similar to the forest reserve system, the overarching goal of watershed partnerships is to protect water resources, particularly the higher elevation forests. Private landowners in each of the 11 watershed partnerships can receive assistance with conservation or have their lands directly managed by a mix of federal, state, and nonprofit organizations. Watershed management plans cover a broader range of ecosystem services that are based on each watershed's specific needs.



▲ Harold Lyon standing next to an albizia tree, approximately five years after planting. Photo: Courtesy Harold L. Lyon Arboretum.

These partnerships are unique in that they strive to collaborate with adjacent landowners to accomplish conservation on a landscape scale. On the Big Island, the Three Mountain Alliance, for example, facilitates conservation activities on members' land through acquiring funding or other resources, developing projects, and facilitating communication and information transfer among members. Together, the adjacent lands form a large area that covers parts of the east, south, and west sides of the Big Island. Fencing and corridors for species movement are among the benefits of managing large areas of land cohesively within each watershed partnership. In addition to providing more comprehensive watershed management, these partnerships are often able to attract more resources and



Hawai‘i Statewide GIS Program, Hawai‘i State Office of Planning.

▶ Forest reserves on the Island of Hawai'i, representing various partnerships among state, federal, and private landowners.

funding due to the large number and diversity of partners involved.

Another unique aspect of watershed partnerships is their emphasis on the social and cultural aspects of forest conservation. Foresters today agree that cultural values need to be integrated in watershed management. Because Hawaiian culture is resource-based, conservation of natural resources is critical for the continuation of cultural activities and practices. Cheyenne Perry, Coordinator for the recently formed Mauna Kea Watershed Alliance, states that for effective forest management, "tuning in" to our connection to the forest is necessary. The basic act of observing and looking around, as well as learning the forest plants, their uses, and whether or not they are invasive, are examples of how tuning in can help protect the forests. Perry believes that this connection can be made possible by outreach and education, specifically youth education, and should be a priority for watershed partnerships, "Getting kids connected is the main thing. When you connect with the forest through field trips, work, and plantings, you care for it and understand how to respectfully interact with plants and the ecosystem." Youth education is an important component of several watershed partnerships and is seen as a long-term investment in the future of Hawaii's watersheds.

For further reading:

State of Hawai'i Division of Forestry and Wildlife Forest Reserve System http://hawaii.gov/dlnr/dofaw/forestry/FRS
Hawai'i Association of Watershed Partnerships www.hawp.org

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[1] Pejchar L, Press DM. 2006. Achieving conservation objectives though production forestry: The case of *Acacia koa* on Hawaii Island. Environmental Science and Policy 9:439-447.

[2] http://web41.its.hawaii.edu/lyonarboretum/about/historyhl

▲ Scaevola taccada. Naupaka kahakai, Green Sand Beach, South Point, Hawai'i Island. Photo: J.B. Friday.

Reforestation Success Stories: Hakalau Forest and Keauhou Ranch

By: Darcey Iwashita and Travis Idol

On Hawai‘i Island, two areas have epitomized the challenges and successes of restoration and reforestation over the past few decades. Below is a brief summary of these special places and why they are of continuing interest to researchers, conservationists, and practicing foresters.

Keauhou is a 30,000-acre former ranch on the windward slopes of Mauna Loa above Kīlauea Volcano, which is owned by Kamehameha Schools. For over a century, koa (*Acacia koa*) and ‘ōhi‘a lehua (*Metrosideros polymorpha*) were logged from the forest and the lands were burned to open up areas for cattle grazing. In the mid-1970s, an upper section of the ranch (~5,000 feet elevation) was commercially logged and then fenced off and cattle removed. The site was mechanically scarified, and koa seedlings regenerated prolifically from seed buried in the soil. Likely due to the proximity of the site to the diverse and intact Kīlauea Forest, a number of other native trees, shrubs, and ferns also regenerated on the site and now form a diverse midstory and understory plant community. Native birds returned to the site, including the endangered ‘akiapōlā‘au (*Hemignathus munroi*), which prefers koa stands for foraging (Pejchar, et al. 2005).

▲ Dr. J.B. Friday marking koa trees for forest inventory at Keauhou Ranch reforestation area, 27 years post-harvest. Photo: Travis Idol.

In 2001, Kamehameha Schools decided to buy out the grazing leases on the remainder of the ranch. Cattle were removed from the site and thousands of koa trees have been planted in areas where natural regeneration is poor or absent. Conservation of existing native species, control of invasive species, and outplanting of koa for both timber and other ecosystem services are now the primary activities on the ranch. These activities serve as an opportunity to reconnect Kamehameha Schools students and staff and other community members to the important natural and cultural resources present at the site through hands-on work: outplanting, weeding, and caring for the land using traditional Hawaiian protocols and methods as well as modern technologies. Numerous cooperative research studies and demonstration projects have been carried out on the ranch, including important silvicultural studies that have provided the basis for koa silviculture in naturally regenerated stands (Pearson and Vitousek 2001; Scowcroft, et al. 2007). There has also been extensive work regarding the improvement and refinement of koa silviculture in planted stands.

Another of the great successes is the restoration of native forest and wildlife in the Hakalau Forest National Wildlife Refuge, which was created in 1985 to protect endangered forest birds and their habitat. Managed by the US Fish & Wildlife Service, the refuge consists of two units: the 33,000-acre Hakalau Forest Unit, which will be discussed in this article, and the 5,300-acre Kona Forest Unit, which was established in 1997. The Hakalau Unit contains some of the most intact native tropical montane rain forests remaining in Hawai‘i. However, approximately 5,000 acres of upper elevation forest in the unit had been grazed, logged, and burned for over 150 years, resulting in open pastures of nonnative grasses that inhibited natural regeneration of native species. A native tree planting program was instituted in 1989 after feral ungulates were removed from these abandoned pasture lands. Propagation of native species in an on-site greenhouse, along with regular out-planting campaigns that continue today, has helped address the lack of a native seed bank in the pastures and speed up the slow natural regeneration process. With the help of federal and state

agencies, as well as a dedicated volunteer base, over 400,000 native plants, including over 175,000 koa, have been planted in degraded areas of these high elevation forests.

The reforestation of Hakalau and the "recapturing" of the pasture lands by koa have been described by Paul Scowcroft, a Research Forester at the Institute of Pacific Islands forestry, as a tremendous success. Not only has koa been successful in the canopy; the understory has also shown great improvement. "The reintroductions of suites of common understory plants and endangered species have been extremely successful," states Scowcroft. Ferns are also returning to the understory, and regular monitoring has shown that grass cover has been reduced. Adding to the success of the reforestation is the increased abundance of native forest birds, including the ʻamakihi (*Hemignathus virens*), ʻiʻiwi (*Vestiaria coccinea*), and ʻapapane (*Himatione sanguinea*), ʻelepaio (*Chasiempis sandwichensis*), and the endangered ʻakiapōlāʻau. The reforestation efforts have thus provided significant habitat improvement for native forest birds in Hakalau and overall improvements in forest structure and biodiversity.

▲ Native understory plantings in established koa corridors at Hakalau. Photo: Paul Scowcroft.

Both of these areas reflect the legacy of land use in Hawaiʻi and the challenges and opportunities for restoring healthy, productive forests. These efforts have taken decades to undo the damage of a century of forest exploitation and largely uncontrolled grazing, and much still remains to be done to achieve the ultimate goals for the landowners and managers. However, they provide an inspiration for others and important lessons as researchers, managers, and professionals work to not only conserve but also restore Hawaii's unique and important forest landscapes.

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A Message from Dr. Travis Idol, President

The Hawaiʻi Forest Institute takes great satisfaction in publishing this sixth issue of the Hawaiʻi Forest Journal. This issue focuses on the history of forest management in Hawaiʻi and current efforts to restore and protect our unique resources and shared heritage. This issue of the Journal is unique in that several of the articles were written by a single person, Darcey Iwashita, a master's student at the University of Hawaiʻi at Mānoa in the department of Natural Resources and Environmental Management. Darcey and myself interviewed forestry professionals, land managers, academics, researchers, government agency leaders, and others in addition to reviewing published literature to gather the information for these articles. Mahalo to Michael Buck, J.B. Friday, Cheyenne Perry, Mike Robinson, Paul Scowcroft, Peter Simmons, and Steve Smith for sharing their wisdom and perspectives with us.

As Chair of the Editorial Review Committee, I also want to thank Dr. J.B. Friday for reviewing the articles. I appreciate his efforts in working with the authors to ensure the high quality of articles in this issue. On behalf of Hawaiʻi Forest Institute Board of Directors, mahalo nui loa to our Journal readers.

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ABOUT THE HAWAI‘I FOREST INSTITUTE

In 2003, the Hawai‘i Forest Industry Association (HFIA) formed the Hawai‘i Forest Institute (HFI), a 501(c)(3) nonprofit organization. The purpose of the Institute is to promote the health and productivity of Hawaii’s forests through forest restoration, educational programs, and support for scientific research.

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