

The History of Forestry in Hawaii

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When did forestry begin in Hawaii? King Kamehameha III's Act No. 2 of April 27, 1846 declared that "the forests and timber growing therein shall be considered government property, and under the special care of the Minister of the Interior . . .". Planting of eucalypts by a private owner began on Maui around 1870 or earlier. A world tour by King Kalakaua in 1881 was an important time. He sent home many seeds and cuttings and thus gave impetus to reforestation. Another significant date is January 4, 1893 when the Kingdom's legislature created a Commission of Agriculture and Forestry. All four of these events reflected a growing awareness of the need to preserve or to restore forest cover. Native forests had declined greatly as the result of uncontrolled livestock, fire, cutting for firewood, clearing for farming, and invasion by introduced insects, diseases, and plants.

These early steps toward a forestry program culminated in Act 44 of the Territorial Laws of 1903 which created the Board of Agriculture and Forestry and defined the purposes, authority, and duties of the Division of Forestry much as they are today. The parts of the law relating to forestry stated that the principal purposes were to gather and publish information on forestry, to cooperate with other organizations, to protect sources of water supply, to have the care and control of forest reserves, to make rules and regulations and recommend additional legislation, and to make the forest reserves self-supporting. A thirty-thousand acre fire above the Hamakua coast in 1902 may have helped to crystalize the decision. The Hawaii Sugar Planters Association ("HSPA") was a leading influence in the adoption of the legislation and for several decades continued to be an active supporter of forestry, especially on private lands.

The Act also authorized the employment of a professionally trained Superintendent of Forestry. Three individuals held this position during more than a half century:

Ralph S. Hosmer	1903-14
Charles S. Judd	1914-39
William Crosby	1939-55

To a large degree, the story of forestry in Hawaii is the story of the services of these three men. Hosmer was



Ralph S. Hosmer, Territorial Forester 1904-1914. He began the establishment of Forest Reserves and set the pattern for their administration.

was born and educated on the U.S. Mainland and gained experience in tropical forestry in the Philippines before coming to Hawaii.

For the first three decades the Division of Forestry operated with meager funds. However, Hosmer immediately began to select forest reserves and these were made official by executive order of the Governor after review by the Board of Agriculture and Forestry. This Board always took an active interest in forestry and gave the Division strong support. With the aid of local residents who were appointed as unsalaried district foresters, progress was made in controlling fires and in reducing trespass by cattle. The Division used the magazine, *The Hawaiian Forester and Agriculturist*, to inform the public about forestry. As a result, forestry always received a high degree of popular appreciation and support.

Hosmer engaged Dr. Joseph F. Rock as a consultant in botany, and the latter published extensively about trees and native plants. He, together with Dr. H. L. Lyon of HSPA, brought in hundreds of kinds of trees from other lands. When Hosmer resigned in 1914, the area of forest reserves had grown from nothing in 1903 to about 800,000 acres of which more than 540,000 acres were owned by the Territory and the remainder by various private individuals. The Division made "surrender agreements" with some private owners who thereby relinquished control of the lands and were exempted from taxation. In many instances the owners retained control

from the U.S. Mainland and was selected upon the recommendation of Gifford Pinchot, Chief of the United States Forest Service and the Nation's pioneer in forest conservation. Judd was Hawaiian born and a descendant of the early missionary, Gerrit P. Judd. He received his education and training in forestry on the Mainland before returning to Hawaii as Hosmer's successor when the latter resigned. Crosby

and continued to pay taxes.

The sugar cane industry and the urban populations of Hawaii depended heavily upon abundant supplies of water of suitable quality. Hosmer and his successor as Territorial Forester, Charles S. Judd, based their policies mainly upon the principles that (1) water was essential to the economy of the islands, and (2) the heavy forest cover served best to regulate the supply and quality of the water. They considered timber production to be important only in areas which lacked surface streams. Wherever possible, they attempted to preserve the native forest, but in many places it had been lost. For reforestation they usually employed exotic species because these were generally better in growth, quality of products, and ability to take and hold the land. Some of the species which were brought in, such as paper bark and members of the fig genus, have no value for products but make a dense, persistent cover. Others have value for ornamentation, wood, windbreaks, fruits, or erosion control. Unfortunately, a few including black wattle and fire bush became serious pests.

The Division of Forestry has records of about 800 species of trees, mostly exotics, that have been planted. Undoubtedly, others of which the Division has no records have been tested.

Charles S. Judd served as Territorial Forester for twenty-five years until his untimely death in 1939. In



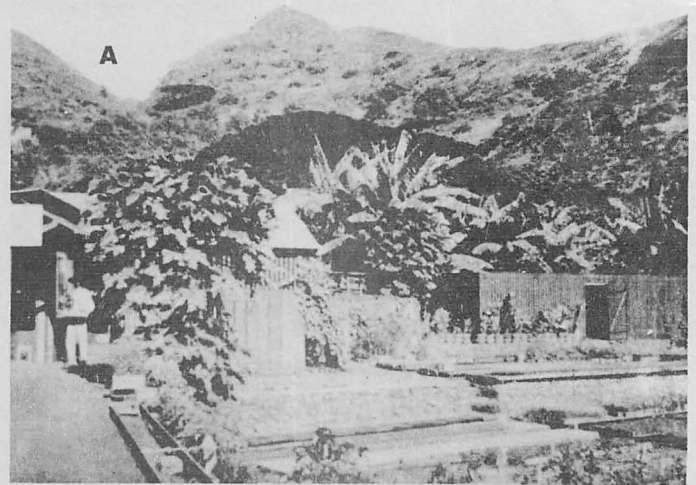
Charles S. Judd, Territorial Forester 1914-1939. He virtually completed the establishment of Forest Reserves and directed their administration with great skill and vigor.

general, his policies were much the same as Hosmer's and he pursued them with vigor and skill. By 1930, the forest reserves had grown to more than one-million acres, a quarter of the land area of the islands. About 670 thousand acres of the land in the reserves were owned by the Territory. Since that time, the net area has changed but little. Management consisted of fencing, eliminating wild livestock, controlling fires, and planting trees. Progress in these

operations gained momentum slowly because of the limited facilities. Nevertheless, progress was made and the effects were cumulative.

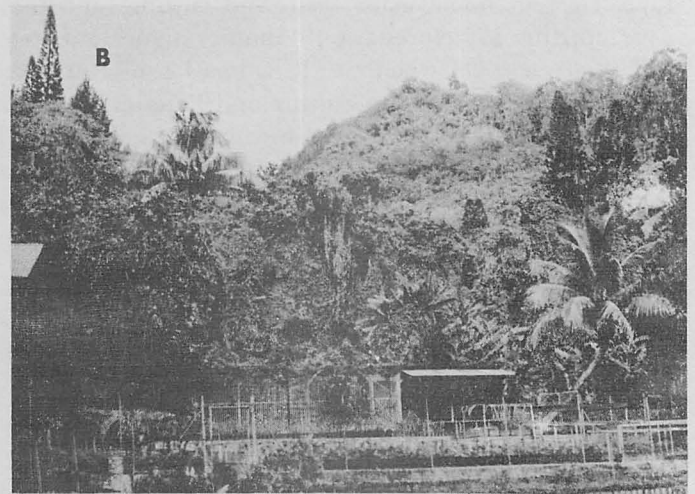
In the biennium 1929-30, almost forty-thousand feral animals were killed or removed from the forest reserves. These included 25,978 goats, 6,610 pigs, 7,672 sheep, 376 cattle, and 95 donkeys. That was the largest removal ever recorded for a two-year period. It indicated the growing effectiveness of the forest protection system.

Even before the creation of the Division of Forestry in 1903, the agriculture and forestry commission had



The Division of Forestry's Makiki Nursery and a portion of Makiki Valley above it.

(A) 1911 when the slopes were being reforested. Photo by Joseph F. Rock (from files of U.S. Forest Service).



(B) Same view in 1970.

Photo - Division of Forestry, LeBarron.

served as the main supplier of planting stock for private owners as well as for the government. Artificial reforestation of Nuuanu, Makiki, and Manoa valleys behind Honolulu began before 1900. The principal forest nurseryman was David M. Haughs who served in this position for many years. In 1908, the Division produced almost one-half million trees. Thereafter, the Division grew an average of about 400 thousand trees per year for the next twenty five years. Most of these trees were planted on private lands because the Division was not funded for large-scale planting. In the biennium 1915-16, the objectives of planting were reported to be:

fuel	44 percent
watershed	38 "
windbreak	12 "
timber	5 "
ornament	1 "
Total	<u>100 percent</u>

Half of these trees were robusta eucalypts. This species remained the favorite for planting for many years.

When the federal Civilian Conservation Corps, the CCC as they were more often called, came to Hawaii in




William Crosby, Territorial Forester, 1939-1955. He continued the policies of Judd after the untimely death of the latter.

1934, the Division of Forestry was ready. The organization now included a salaried Associate Forester on each major island and a considerable number of Rangers and other employees. Among the men who served during the time of the CCC were long-time Associate Foresters L. W. Bryan and A. W. Duvel, Karl Korte who later became a District Forester, and Walter W. Holt and Max F. Landgraf, both

of whom later served as State Foresters. For the first time, the Division was able to undertake on a large scale the tasks which it had aspired to do for three decades. Years later in evaluating the work of the CCC, William Crosby said, "... The Civilian Conservation Corps accomplished a reforestation program in eight years that would have been equivalent to 40 years of work under normal Territorial appropriations."

From 1935 to 1941, with the help of the CCC, an average of close to two-million trees were planted per year in the forest reserves. Tree planting statistics are only an indication of the numerous valuable services of the CCC. It constructed and rebuilt literally hundreds of miles of fences and foot trails. It built forest nurseries, truck roads, service buildings, telephone lines and informational signs. It collected many tons of seeds for use in the nurseries and for aerial seeding.

The work of the CCC stopped abruptly after the attack on Pearl Harbor. During World War II, the Division operated only at the custodial level. Developments after 1945 will be reported in a future article. 



Some of the Division's key personnel during the 1930's and onward. Karl H. Korte who later became a District Forester, Maui; L. W. Bryan, District Forester (later Deputy State Forester); Walter W. Holt, District Forester, Maui (later State Forester); A. W. Duvel, District Forester, Kauai; and Max Landgraf who later served as District Forester on Oahu and Hawaii, and State Forester.

Photo - Norman Carlson, 1960

Acknowledgement

Information contained in this report was obtained chiefly from the annual or biennial reports of the Hawaii Department of Agriculture and Forestry, and to lesser extents from "The beginning five decades of forestry in Hawaii" by Ralph Sheldon Hosmer, *Journal of Forestry*, Volume 57, 1959, "A record of forest plantings in Hawaii" by Robert E. Nelson, U.S. Forest Service Resource Bulletin PSW-1, 1965, "Eucalyptus Culture in Hawaii" by Louis Margolin, Territory of Hawaii, Board of Agriculture and Forestry, Division of Forestry, 1911, and "The Conservation, Development, and Protection of the Water Resources of the Honolulu Urban Area", a staff report by the Board of Water Supply, City and County of Honolulu, Volume 1, 1948. The photographs of Ralph S. Hosmer, Charles S. Judd, and William Crosby were copied from the *Journal of Forestry*.

The History of Forestry in Hawaii

BY KARL H. KORTE
DISTRICT FORESTER, MAUI

This article continues the history of forestry in Hawaii. The preceding article told of the events, men, philosophies, objectives, and accomplishments of forestry in Hawaii up through World War II.¹

A Period of Change

At the end of World War II, Hawaii stood on a threshold of change. Change came and is still coming with tremendous rapidity and effect. The main features are the population growth, a shift from an agriculture economy to military and now to a tourist economy.

The men responsible for the leadership of the Division of Forestry during this period of time were Territorial Forester William Crosby (1939-1955); Walter W. Holt, first as Territorial Forester (1955-1959) and, later, as State Forester (1959-1964). Other State Foresters have been Floyd M. Cossitt (1964), Max F. Landgraf (1965-1967) and Tom K. Tagawa (1967 to present).

It was not until the 1950's that an awareness commenced to grow that some of the older planted forests had potential value for sawtimber. The rapidly growing population with urban and industrial development within the State generated a demand for lumber. The possibilities of a forestry industry was considered seriously.

In 1956, C. Eric Reppun then President of the Board of Agriculture and Forestry, realizing the need for a more positive and progressive forestry program, requested assistance from the U.S. Forest Service. The purpose was to establish a forest research center in the Territory to investigate and assess our forest land and forest potential.

The Territorial legislature recognized that before a proper appraisal could be made of the timber potential and before a substantial timber industry could be developed, more specific timber resource information must be obtained. Therefore, in 1957 the Territorial legislature made provisions in Act 234 for the Board of Agriculture and Forestry to cooperate with the U.S. Forest Service in initiating a timber resource survey in the Territory. In November 1957, the U.S. Forest Service assigned Robert E. Nelson, a research forester, to direct the work involved in a timber resource survey and to provide for general forestry assistance. The Board of Agriculture and Forestry assigned Tom K. Tagawa as State coordinator to this survey. The information gathered and compiled had significant importance in determining the potentialities of the forests for timber, recreation, and wildlife as well as for its primary objective, water conservation.



Tom K. Tagawa, State Forester 1967-present.
Photo by U.S. Forest Service

In 1960 a comprehensive analysis of research needs was made with the help of numerous public agencies and private individuals. It was published under the title, "A Wildland Research Plan for Hawaii". The research plan is divided into first and second priority projects, totaling 284 man-years of effort. The projects are categorized into nine groups; (1) watershed, (2) soils, (3) silviculture, (4) products utilization, (5) grazing, (6) wildlife habitat, (7) recreation, (8) protection, and (9) economics.

During the post-war period, more recreational use commenced to be made of the forest reserves and by 1954 a system of state parks had been established. In 1959 a new Division of State Parks was created and the parks were reassigned to that organization. However, the Division of Forestry continued to make major contributions to recreation because forests supply the environment and opportunities for many kinds of outdoor activities.

A New Department

With Statehood, a Department of Land and Natural Resources was established on May 11, 1960. The Division of Forestry was then transferred from the Department of Agriculture and Forestry to this newly created department.

¹ LeBarron, Russell K.. The History of Forestry in Hawaii—from the beginning through World War II. Aloha Aina, April 1970.

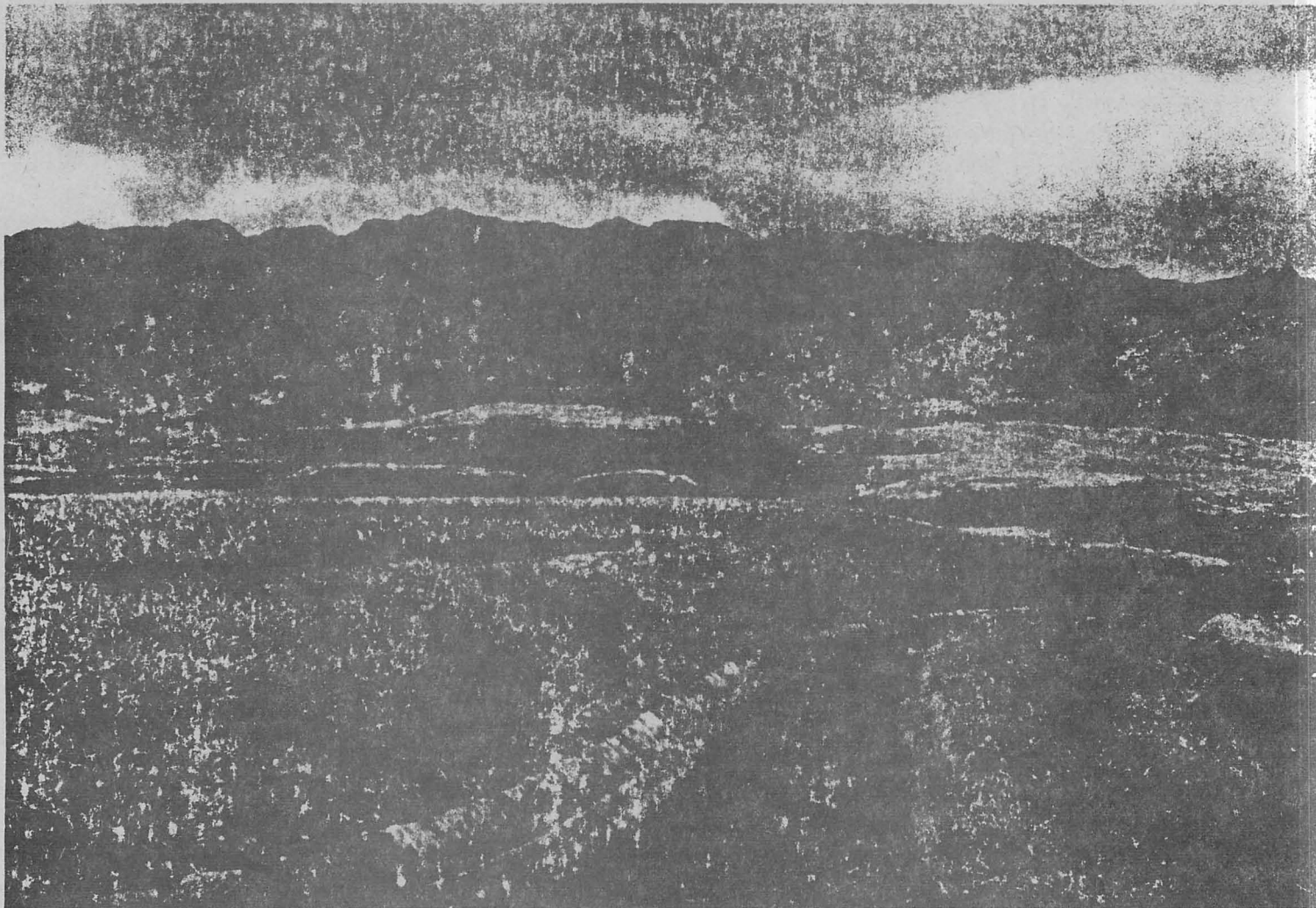
In 1961 a 5-year planting program was prepared. It established an objective of 2,850 acres per year. While this goal has not been met, we have planted much more than during the preceding decade. In fiscal years 1961 to 1969 inclusive, a total of 16,000 acres was planted with over 7 million seedlings.

In 1961 the Division prepared "A Multiple Use Program for State Forest Lands for Hawaii". It clearly set forth for the first time a well-organized plan for management. Its objectives are to protect and in some cases, to restore vegetation on the State's precious watersheds, to increase production of timber, to manage and develop forest land for wildlife and recreation, to protect forests from fire, insects and disease, and to continue a major research program.



Max F. Landgraf, State Forester 1965-1967.

Photo by LeBarron



The Division of Forestry continues to consider water the primary product of the Forest Reserves.

Photo by LeBarron



Walter W. Holt, Territorial Forester, 1955-1959, State Forester 1959-1964.

Photo copied from Journal of Forestry

Perhaps the most significant recent legislation concerning land management was Act 187, Session Laws of Hawaii 1961, commonly called the "green belt" law. Act 187 established two new land use categories; "urban", and "agriculture", and renamed the forest reserves, "Conservation districts". Subsequently Act 205, Session Laws of Hawaii 1963 increased the categories to four by adding "rural". The Conservation districts are administered by the Department of Land and Natural Resources. The new land zoning laws have not changed prior forestry legislation. Rather, the effect has been to extend the powers of the State to control the manner in which public and private lands within the Conservation districts may be used.

In 1964, a Cooperative Forest Management Program was initiated through a grant-in-aid program from the U.S. Forest Service. Under this program, private landowners and wood processors are able to obtain technical assistance from a Service Forester. The object is to encourage the development, utilization and protection of private lands within the State, thus complementing the program on State-owned lands.

New Challenge?

In recent years, demands upon the State's forest lands have increased greatly. These demands come from many sources such as highway engineers, farmers and ranchers who wish to enlarge their operations, land developers, users of forest products, recreationists and hunters, and utility companies which need rights-of-way for power lines and access roads to telephone repeater stations and radio towers.

Now, the sudden rise in public apprehension about environmental quality has focused critical attention upon how the forest reserves are managed. No longer is the work of the Division of Forestry taken for granted. Various special interest groups are becoming concerned with details of how forest reserves are managed and on

what bases decisions are made. This interest is stimulating. It will require increased imagination and effort by the foresters to satisfy the desires of our affluent society. Hawaii, because of its isolation, contains a unique biological system. Many native plants, birds and insects are endemic; that is, they were found nowhere else in the world.

Until very recently, the area of undeveloped and relatively undisturbed land was so large that, except for a few special areas such as Alakai Swamp on the island of Kauai, there was no strong reason to restrict development. Now, the situation is changing. We believe that provisions for protecting tracts of natural plant communities are seriously inadequate. Recently, Governor John A. Burns appointed a committee to study preservation of scientific areas and the last legislature enacted a law that will strengthen action in this field. These measures reflect the growing concern by the public and lawmakers for ecological considerations and a sense of responsibility to future generations.



Floyd M. Cossitt, State Forester 1964.

In these circumstances, the concept of multiple-use is an essential guide to management policies. "Multiple Use" is simply a shorthand way of saying that frequently a forest is capable of supplying several kinds of goods and services simultaneously. It also allows for major emphasis to be placed on a single use to recognize specialized needs such as scenic areas, natural area preserves, or municipal watersheds. Wisely managed, the forest reserves will ensure an environment that will supply pure water from our watersheds, provide places for scientific studies, contribute to recreation including spiritual values as well as physical activities for present and future generations, support a modest timber industry and enhance natural beauty. 