



1962-64

ANNUAL REPORT

**DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII**

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STATE OF HAWAII**

1962-64

ANNUAL REPORT
TO THE GOVERNOR

July 1, 1962 to June 31, 1964

(Inclusive)

**HONOLULU, HAWAII
DECEMBER 1965**

ORGANIZATION CHART DEPARTMENT OF LAND AND NATURAL RESOURCES

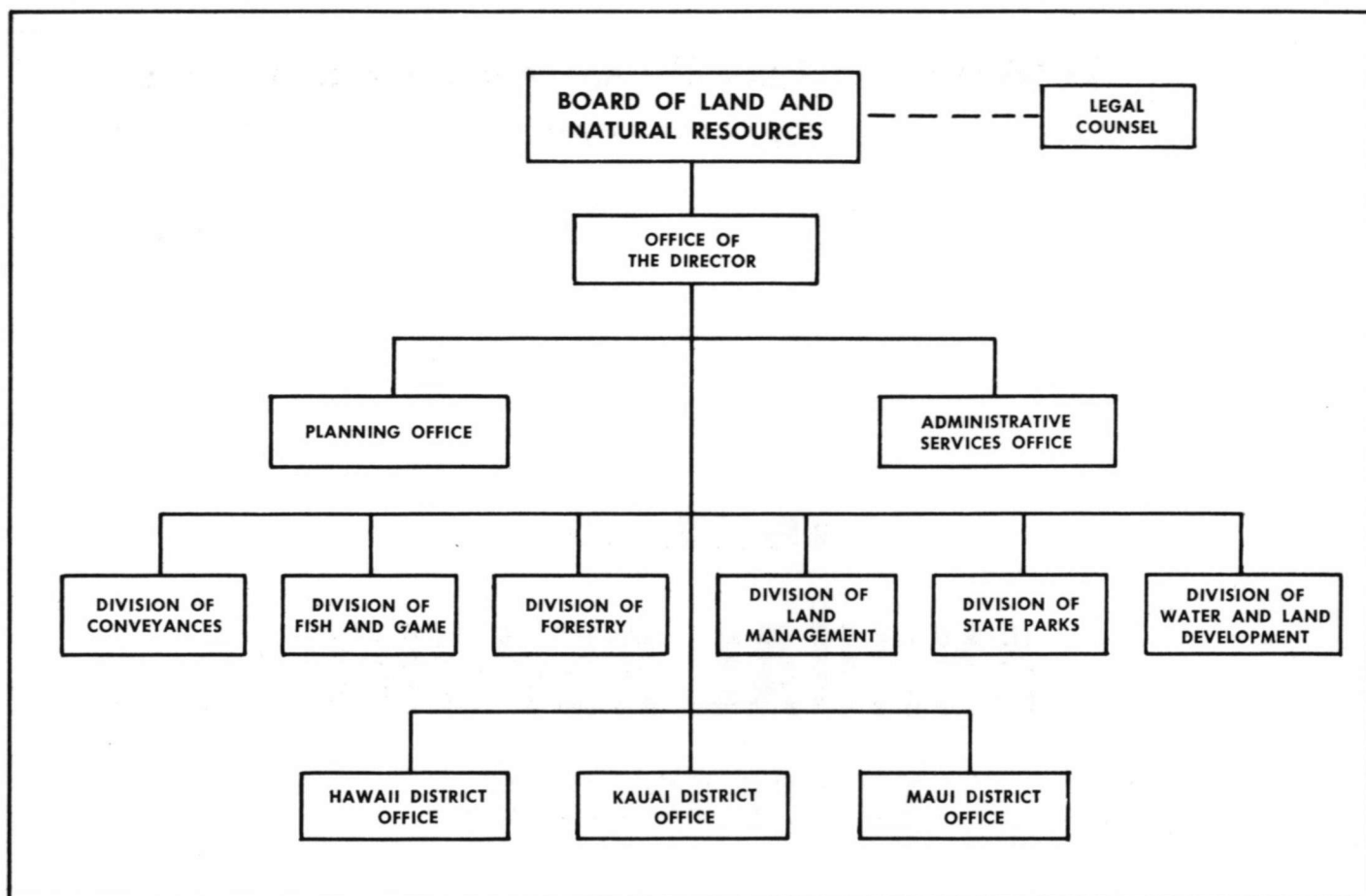


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JOHN A. BURNS
GOVERNOR OF HAWAII



DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

December 31, 1965

Honorable John A. Burns
Governor of Hawaii
Iolani Palace
Honolulu, Hawaii

Sir:


We are pleased to submit herewith, the report of the Department of Land and Natural Resources covering the fiscal period commencing July 1, 1962, and ending June 30, 1964.

Substantial changes have been made in the composition of the Board and in the position of the Chairman of the Board during the two years covered by this report. The functions of the Board, and the responsibilities and authority of the Board and of the Chairman have been more clearly defined. These vital changes have resulted generally in a more vigorous and imaginative approach by the Board and by the Department to the problems of land development and use within the State.

We would like to bring to your attention, and to commend, the excellent work carried out by the Staff of the Department during the two year period. We would also at this time like to express our sincere appreciation to other State, Federal and County agencies, and to private organizations and individuals for their cooperation with the Department and the Board.

Respectfully submitted,

BOARD OF LAND AND NATURAL RESOURCES


JIM P. FERRY
Chairman and Member

THE BOARD OF LAND AND NATURAL RESOURCES

"The Department of Land and Natural Resources shall be headed by an executive board to be known as the Board of Land and Natural Resources".

"The governor shall appoint the chairman of the board from among the members thereof".

"The board may delegate to the chairman such duties, powers and authority, or so much thereof, as may be lawful or proper for the performance of the functions vested in the board".

"The chairman of the board shall serve in a full time capacity, and shall be compensated therefor . . ."

"The department shall manage and administer the public lands of the State and the water resources and minerals thereon; shall manage and administer the forest, fish and game resources of the State; and manage the forest reserve and state parks, including historical sites".

From Chapter 14A-20
Revised Laws of Hawaii
1955 as amended.

MEMBERS OF THE BOARD

(as of June 30, 1964)

		<i>Appointed</i>
Mr. Jim P. Ferry, CHAIRMAN	Oahu	10/16/63
Mr. Richard L. Summers	Oahu	5/ 9/63
Mr. Tai Sung Yang	Maui	5/ 9/63
Dr. Nobuichi Masunaga	Kauai	1/ 1/64
Mr. Hiroshi Tanaka	Hawaii	5/ 9/63
Mr. George S. Yamaki	Oahu	1/ 9/64

SECTION 1

OFFICE OF THE CHAIRMAN

The principal functions of the Department of Land and Natural Resources are management, control, administration, and protection of the natural resources of the State. The overall policy and administrative control of the functions of the Department are provided by the executive Board of Land and Natural Resources, and by the Chairman of the Board.

Substantial changes have been made in the organization and responsibilities of the Board and the Chairman through the passage of Act 10, Session Laws of Hawaii 1963. In its essentials, this Act requires the Governor to appoint the Chairman of the Board from among the members of the Board; establishes the Chairman as the fulltime paid executive officer of the Department; and, authorizes the Board to delegate to the Chairman various powers and authority necessary to the proper and legal conduct of the functions of the Board and the Department.

There have been substantial changes in the membership of the Board and in the Office of the Chairman during the two year period. Mr. Hinano Cook, Director, resigned on January 25, 1963, to be succeeded by Mr. George Siu, Acting Director who in turn resigned on October 18, 1963.

Mr. Jim P. Ferry was appointed to the Board, and to the Chairmanship of the Board on October 16, 1963. Mr. Richard L. Summers, previously Chairman of the Board prior to the reorganization, was appointed as a member of the Board from Oahu effective as of May 9, 1963. Other members of the Board, and their dates of appointment are: Mr. Hiroshi Tanaka from Hawaii, May 9, 1963; Dr. Nobuichi Masunaga of Kauai, January 1, 1964; Mr. Tai Sung Yang of Maui, May 9, 1963, and Mr. George S. Yamaki of Oahu, January 9, 1964. The Director of the Department of Land and Natural Resources, Mr. Cook, and the Director of the Department of Agriculture, Mr. Gordon P. Chung-hoon, were ex-officio, members of the Board until the reorganization.

Mr. Sunao Kido was appointed as Deputy to the Chairman of the Board on November 22, 1963.

The Chairman and members of the Board have placed strong emphasis on resource development within the State during the two year period covered by this report. This broad program has covered development of State lands for farm, residential and industrial or commercial uses; development of water sources and water distribution systems; development of programs and improvement of programs for development and utilization of timber resources; and, for effective utilization of State parks and recreational hunting and fishing areas.

The Board, and the Office of the Chairman receive close support from the Administrative

Services Office and the Planning Office of the Department.

Administrative Services Office

HENRY LAU

Administrative Services Officer

The Administrative Services Office provides essential support and staff functions for the Operating Divisions of the Department, and provides also close staff support to the Office of the Chairman and to the Board of Land and Natural Resources.

The major operational divisions within the Office are Fiscal, and Personnel. These staff groups perform various support, control, and advisory functions for efficient operations of the Department.

The primary functions carried out by the Fiscal branch of the Office include such critical operations as centralized purchasing, receipt of and accounting for receipts, budget preparation, expenditure control, maintaining accounts and records, and, fiscal reporting. The Personnel branch performs services related to personnel management and processing of personnel records, management and operational reviews, personnel reporting, and personnel records maintenance.

The Administrative Services Officer, and staff of the two operational divisions, prepare analyses and recommendations, and advise the Chairman and the Board on problems of fiscal management and control, and on personnel services.

There were no major significant changes in either the staffing or operations of the Administrative Services Office during the two year period of this report.

The Office carried out its functions with a total staff of 13 persons.

Planning Office

PAUL TAJIMA

Project Planning Coordinator

The principal functions of the Planning Office are to provide basic staff support to the Office of the Chairman and to the Board of Land and Natural Resources. The Office also functions to provide guidance and aid to the Operating Divisions of the Department in the planning and conduct of their programs and projects.

The Planning Office recommends objectives, policies, and broad programs to fulfill the Department's role within the State, and provides a systematic evaluation of the accomplishments and

effectiveness of such programs. The Planning Office is also responsible for conducting long-range planning in coordination with the operating and staff units of the Department.

The Office maintains a central library of books, publications and published materials relating to natural resources, and with the development programs of the State.

The Planning Office bears responsibility for, and conducts studies on planning, economic feasibility and other critical areas of land development projects, and prepares development concepts, design criteria and alternative proposals for such projects. The Office also conducts studies of land use and land values, reviews appraisal reports, and coordinates land use and appraisal studies with other public and private agencies.

The Planning Office prepares public information releases and other reports relating to the activities of the Department.

The Planning Office, during the two-year period of this report, has been interested in or has conducted work with a wide range of projects, in-

cluding such as the park developments at Kokee and Wailua on Kauai, Wainapanapa Caves on Maui, Kahana Valley on Oahu, and Akaka Falls, Mauna Kea, and Wailoa River on the Island of Hawaii. Land development projects include the Waimanalo Farm subdivision, Molokai Farm Lots, and similar projects on the island of Hawaii such as Panaewa and Lalamilo Farmlot Subdivision.

The Planning Office is continuing to work in close cooperation with the Staff and Operating Divisions of the Department of Land and Natural Resources, and with other agencies in carrying out their functions. A major project in this respect has been the preparation of rules and regulations governing the uses of lands within the Conservation Districts established by the State Land Use Commission. Preliminary rules and regulations have been drafted. Discussion meetings have been held with representatives of State and local agencies, as well as with community groups and land owners.

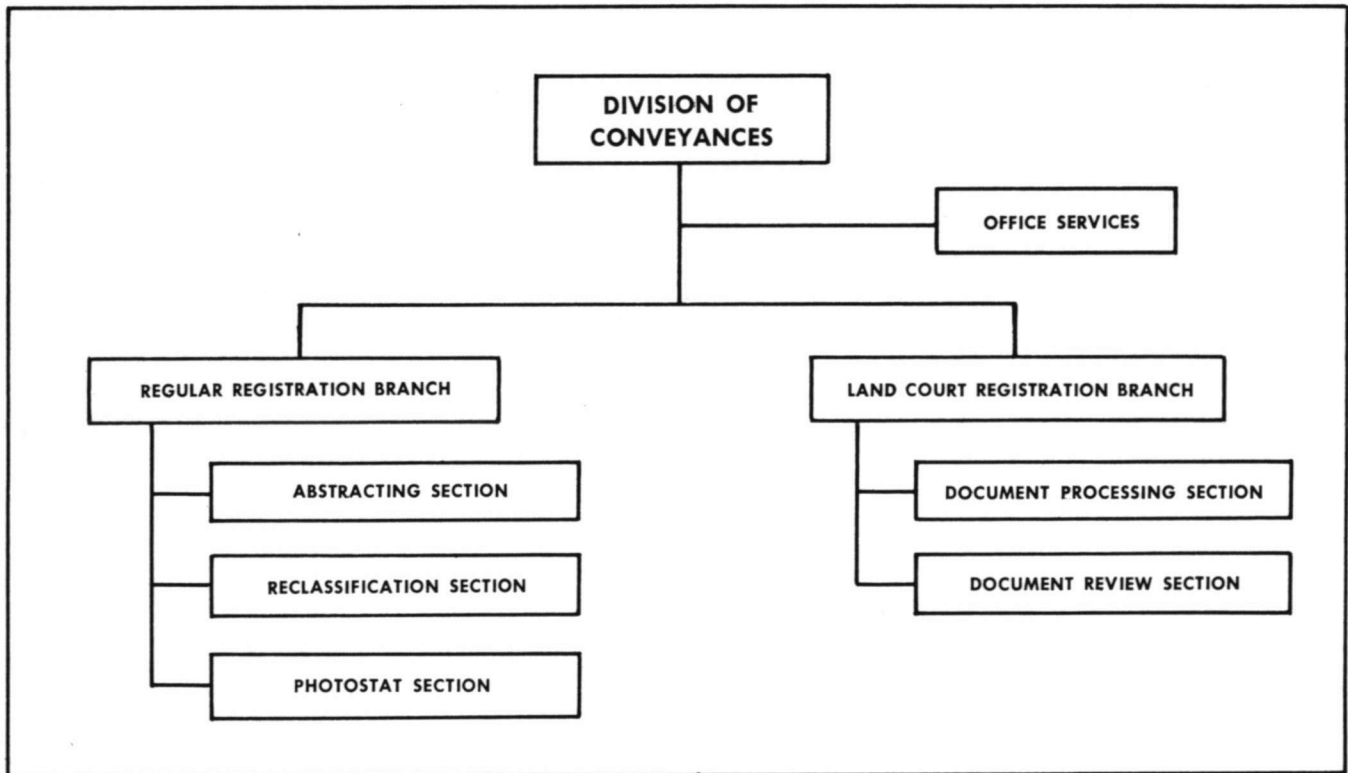
The Planning Office operated with a total staff of five persons, including the Program Planning Coordinator, during the period under report.

SECTION 2

DIVISION OF CONVEYANCES

MICHIKI ADACHI, Registrar of Conveyances

ORGANIZATION CHART—DIVISION OF CONVEYANCES



The principal functions of the Division of Conveyances are to receive, file, index, and record all legal documents affecting land titles within the State of Hawaii, and, other legal documents entitled to recordation. The Division is also responsible for the preservation and protection of all files and records held, as well as for issuance of certified copies of any matters of record.

Because of differing legal requirements, and to provide adequate administrative control of various

processing stages, the general operations of the Division are separated into two groupings of Regular Registrations, and Land Court Registrations. Both categories of documents have shown a continual increase in volume during the past ten years, and this increase continued in substantial degree during the period of report. The total annual volume of documents recorded in 1964 was 67,004, which is almost double the 36,913 recorded in 1955. Issuance of Land Court Certificates of Title showed an increase of similar magnitude during

the same period. Increased volumes of documents offered for registration are expected to continue in the future.

The Division is continually seeking means to improve the overall efficiency and effectiveness of operations. A number of significant changes which were introduced into the operations, and which have had beneficial effects on operations are:

- (1) Initiation in June 1963, of reduced copy size of recorded documents. This reduction in size has permitted a commensurate reduction in size and weight of liber books. This reduction has allowed in turn, significant savings in filing space, and in costs of binders and stationery supplies; and
- (2) The use of microfilm for the production of visual copy for filing, as well as for security copy purposes was also initiated in 1963. This replacement of the previous photostat system has greatly expedited the work of the Division and has aided in reducing costs of the overall operations.

Improvements in operating procedures, as well as the use of more efficient methods as outlined above, have enabled the Division to substantially

increase operational output of the staff, without increase in personnel, and with an actual reduction in overall costs of operations of the Division.

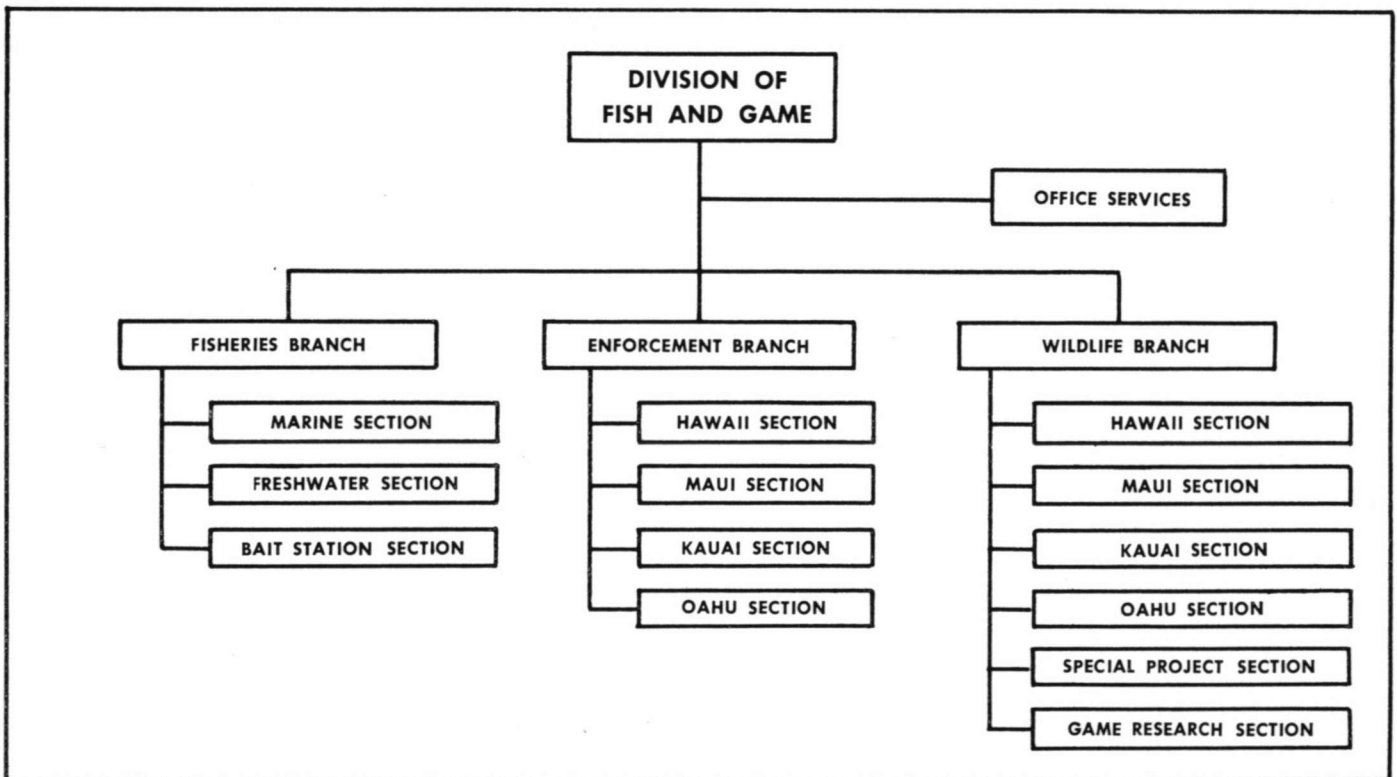
A study was initiated in 1963, and continued through 1964, in conjunction with the Management Services Division of the Department of Budget and Review, the Department of Taxation, and the Office of the Governor, to investigate the possible utilization of Electronic Data Processing to improve the efficiency and effectiveness of the Division's operations. Initial results of the investigation suggest that the use of such advanced techniques may greatly improve the speed and accuracy of the existing registration procedures. The study is continuing.

A major problem within the Division continues to be the need to up-grade the entire filing system by microfilming the past records. Current levels of staff and equipment permit microfilming of current registrations only. It is considered essential, from the point of security and for reduction of filing space requirements, that this operation be expanded to permit microfilming of all past records as well. Present estimates indicate that this operation could be carried out by 1970 with but minor increase in costs. Efforts will be continued to gain acceptance of this move.

SECTION 3
DIVISION OF FISH AND GAME

MICHIO TAKATA, State Fish and Game Conservationist

ORGANIZATION CHART—DIVISION OF FISH AND GAME



This Division bears the primary responsibility within the Department for the development, management, and protection of the fish and wildlife resources of the State. The Division, for purposes of administrative operations and control, is divided into an Office Services section, and three operating Branches, for Fisheries, Wildlife, and Enforcement.

The Office Services section provides general administrative and clerical support to the three operating branches. Office Services staff are also responsible for the conduct of the State's role in Federal Aid Coordination for the selection, plan-

ning, supervision and administration of all federally supported fish and wildlife projects within the State. This section also issues licenses and permits for commercial and sport fishing, and for hunting.

Fisheries Branch

The principal functions of this Operating Branch are related to the introduction and stocking of desirable species of commercial and sport fish and shellfish within the State; the development and management of public fishing areas; management of saltwater fishery areas, and the conduct of varied research projects and studies on fisheries

and fish species. The Fisheries Branch also maintains records of commercial fish landings at the various ports of the State.

This branch continued the importation of desirable fish species by the introduction of additional numbers of Channel Catfish fry for release at several suitable areas in the State. The trout fish hatchery at Kokee was again operated in the late winter and early spring months for production of fingerlings for release. Young fingerlings of both the Largemouth and Smallmouth Bass were collected at the Wahiawa Reservoir, which was the site of the initial releases, for release at Wailuku, Maui, and at Waiakea, Hawaii. The Branch staff continued with the limnological survey of all streams in the State.

The Fisheries Branch carried out surveys of use of the public fishing areas, as well as of the effects of management and stocking programs. Exceptionally low water levels in the Wahiawa Reservoir caused an extensive kill of both game and forage fish, and restocking was initiated to replace the loss. Studies were also continued on methods for weed control and for pollution control in various public fishing areas. Recent reports indicate that the Channel Catfish and the Rainbow Trout are well established in several of the fishing areas.

The Fisheries Branch has also continued with

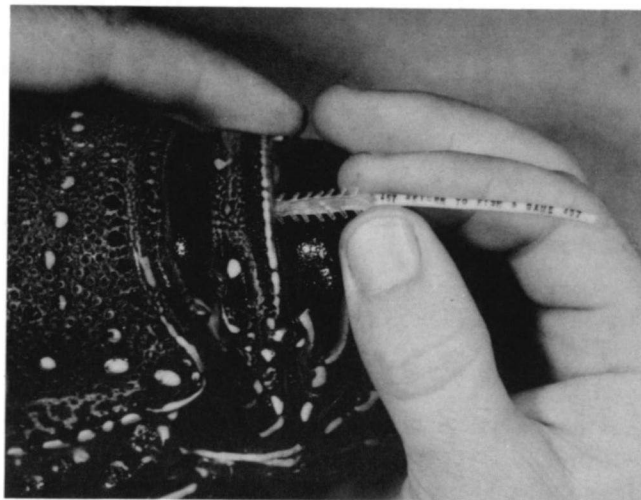
IM 2nd David J. Moore of the U. S. Navy stationed at Pearl Harbor displaying a 26-pound channel catfish he caught on an eight-pound test line. (Photo by Wahiawa Sporting Goods)



Divers making underwater transect.

the development of artificial shoals in selected areas in the off-shore waters of the State. These shoals are created by dumping either old automobile bodies or concrete pipe into the ocean at the selected points. Periodic underwater surveys and observations of these sites, and census counts of fish populations at the sites indicate that the artificial shoals are successful in attracting and building up heavy populations of desirable fish.

Life history studies are being conducted on a number of valuable fish and shellfish species around the ocean waters of the State. Species under study include the Moi, Akule, Kona Crab, Oyster, and Trochus Shell. A substantial number



Spiny lobster with identification tag.

of Trochus were imported from Guam, Marianas Islands, and released off Kaneohe Bay, Oahu. If this introduction is successful, it will greatly enhance the shellfish resources of Hawaii.

Production of livebait species, Tilapia, by the Branch continued during the two year period. Sales of live bait to commercial fishermen were substantially reduced from previous years. This reduc-

tion in demand is attributed to poor tuna conditions, and an abundant supply of naturally occurring nehu bait.

Statistics for commercial fish catch for the two year period show that there was a substantial reduction in catch of 10.8 million pounds in 1963 as compared to a total of 13.9 million pounds in 1962, with most of the loss represented by lower catches of Aku. The Aku catch in 1962 was 10.3 million pounds as compared to 7.1 million pounds in 1963. The Pacific Blue Marlin (187,000 vs. 256,000), and the Akule (147,000 vs 244,000) also showed reductions in catch. These losses were somewhat off-set by increased landings of Yellowfin Tuna (449,000 vs 385,000) and Opelu (437,000 vs 221,000).

Statistical reports for 1964 show increased total landings of commercial fish for the year of 12.1 million pounds. Major increases were recorded for Aku (8.5 million pounds), Striped Marlin (399,000 vs 275,000), and Ulua (117,000 vs 72,000).

Wildlife Branch

The major functions of this branch are related to the establishment and development, management, and protection of the gamebird and game mammal populations of the State.

To this end, the Branch maintains and manages twenty-two game management and public shooting areas within the State, covering some 475,000 acres. Statistical studies and reports indicate that there has been a slow, but continuous increase in the use of these public shooting areas by licensed hunters.

Maintenance of watering units and jeep access roads constitutes a major part of the game area management program. Fourteen miles of new access road were constructed and added to the system to bring the total of roads and jeep trails maintained to more than 200 miles. Five new game mammal and game bird watering units were



Game watering unit.



A Wildlife Biologist collecting a blood sample from a wild pig for disease studies.

installed, to bring the total of such units maintained to 221 in all game management areas. Other management activities carried out included thinning of brush for hunter access, and planting of perennial wildlife food plants to improve game habitats.

Research and control activities carried out in connection with the game management programs included construction and maintenance of game enclosure plot fencing to determine the effects of game animals on vegetation, installation of hunter checking stations, and censusing of game animals prior to opening of special seasons in some intensively managed shooting areas.

The game introduction and research projects undertaken by the Branch continued to make progress during the two year period. The antelope and mouflon sheep herds on Lanai continued to increase, although there was loss of some antelope due apparently to a respiratory ailment. Several fawns have been produced by the Blacktailed Deer introduced into Kauai, and this fine game animal appears to be well adapted to Hawaiian conditions.

The Mouflon sheep introduction program being conducted at Mauna Kea has been moved into a full field project phase. A sizeable flock of pure-bred Mouflon were released to continue the spread, and to accelerate the population growth which is occurring at an increasing rate in the Puu Laau and Kahinahina areas of Mauna Kea.

The ecological study of the feral pig, initiated earlier, was continued through the two year period, with much information being gained. This broad study is designed to provide information vital to the proper management of this important game species in Hawaii.

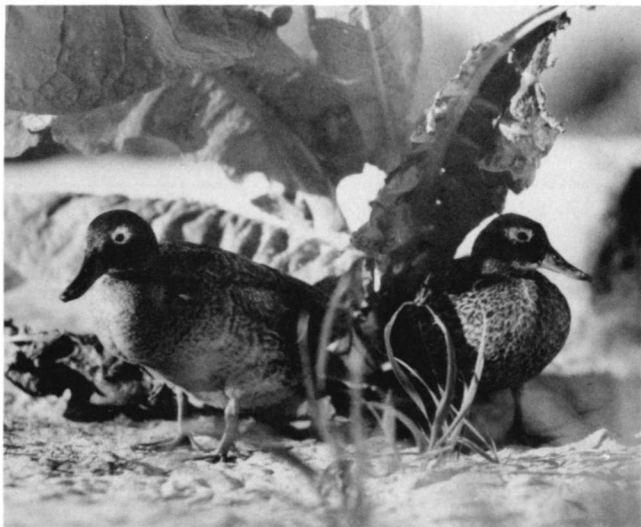
No new foreign gamebird introductions were made during the period. However, a substantial number of Rio Grande turkeys (102) were introduced from Texas and released on the various

islands. Studies continued to evaluate the effects of previous introductions and releases of exotic gamebirds.

Progress was continued on the Nene Restoration project, with additional birds being penraised, and released in the Keauhou area of Hawaii, and on Haleakala on Maui. Evaluation studies indicate that survival is good, and that on Hawaii, the released Nene are integrating with the wild birds.

A grant was received from the World Wildlife Fund during the period, to initiate a restoration project for the koloa or Hawaiian duck. The koloa is considered to be an endangered wildlife species, as it occurs now only on Kauai, and the total population is estimated at about 500 birds. The project will initiate studies to determine the factors affecting survival and distribution of the species, and will also rear birds in captivity for release in the wild.

The Branch continued its protective surveillance of the Leeward Islands under a contract with the U. S. Fish and Wildlife Service. Two trips were made to this wildlife refuge to make studies of the population and of the habitat, and to conduct a census of the wildlife. No signs of unauthorized entry to the refuge were discovered.



A pair of the rare Laysan duck in their native habitat. The entire world's wild population of this duck (estimated at 600) is restricted to the island of Laysan. (Photo by U. S. Fish and Wildlife Service)

Approximately 10,000 acres of virgin native forest in the Alakai Swamp area on Kauai were set aside by regulation to be managed as a wilderness preserve. This unique area is the home of several rare and endangered species of native birds, as well as of many of the more common native and introduced species. In addition, many species of endemic plants and insects are peculiar to the area. In the interests of preserving the area with its valuable flora and fauna as a living museum, regulations prohibit the building of roads and

structures, or the clearing of vegetation in the area, and controls other activities which could be harmful to the ecology of the area.

Enforcement Branch

The Enforcement Branch continued to discharge its primary function of enforcement of the fish and game laws and regulations of the State. This task is carried on by a force of 18 permanent Wardens, who cover the entire State. This staff of full-time paid Wardens is complemented by a volunteer corps of Deputy Wardens appointed by the Board of Land and Natural Resources, who contribute their own time and vehicle use to aid in this important enforcement work. In-service training of Deputy Wardens and of the Staff Wardens is provided in order to improve the efficiency and effectiveness of this combined force.

A major problem being faced by the Enforcement Branch at this time is the spectacular increase in fishing activities in marine areas by SCUBA and skin divers. Enforcement coverage over these activities is particularly difficult in view of the operational medium involved.

In addition to normal enforcement activities, the Warden staff, including the Deputy Wardens, participated in such activities as operation of Hunter Checking Stations, investigations of crop damage by gamebirds and mammals, and supervision of field trials. The group also assisted the Fisheries and Wildlife Branches in various research and management activities such as game census, creel census, collection of field and biological data, and stocking of fish and wildlife species.

The staff of Wardens is also called upon to conduct public relation activities, such as visits to schools and to attend public meetings to explain and answer questions relative to laws and regulations, enforcement, and other activities of the Division.

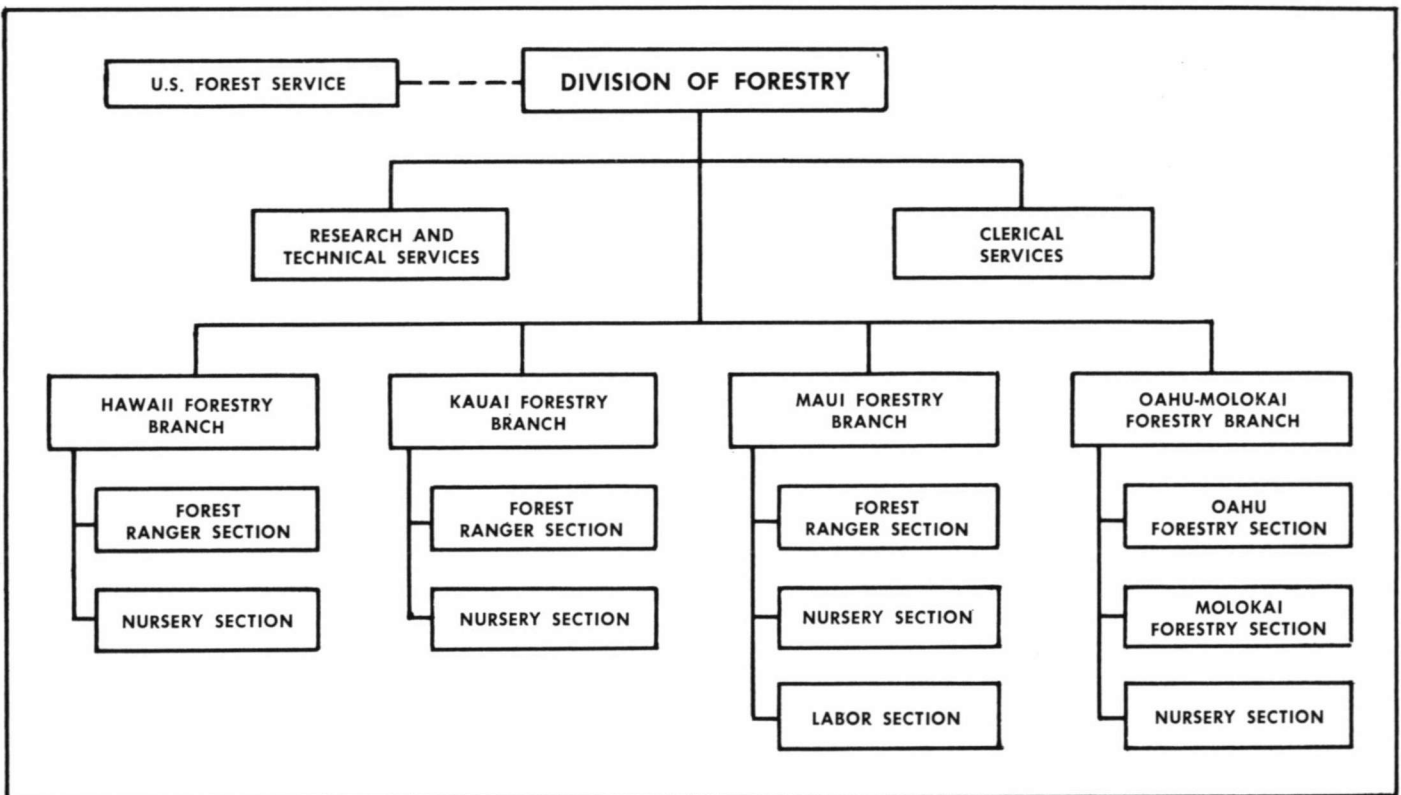
Checking deer at control station.



SECTION 4
DIVISION OF FORESTRY

MAX F. LANDGRAF, State Forester

ORGANIZATION CHART—DIVISION OF FORESTRY



The Division of Forestry has the responsibility for State-wide forest management for the development and protection of watersheds, for the production of timber and other forest products, and to make forest lands available for other uses in accordance with acceptable Multiple Use Concepts formalized in Departmental Policy in 1962. Within this broad series of programs, there are not less than a half million acres of actual and potential commercial timber lands, and an equal amount of other forest lands.

The primary functions of the Division within this broad area of responsibility are to recommend and enforce laws and regulations designed to conserve and manage forest resources; protect forest and other wildlands from fire, insects, diseases, and other injurious agents; and to develop and conduct

programs and projects of reforestation for timber production, watershed protection, recreation, forage production, and wildlife habitat.

A significant advance in the staffing of the Division was the establishment and filling of the position of Service Forester. This is a State position, which is partly supported with Federal funds under the Cooperative Forest Management program. The major responsibilities of this new position are to work with and to encourage forestry programs by private land owners of forest lands, and to provide technical advice and guidance to such landowners whose small forest operations do not justify employment of private consultant forester services. The Services Forester also assists in review of forest practices under the Federal Agricultural Conservation Programs.



A tree planting site. Cleared for planting at the left; uncleared at the right. In recent years cost of site preparation has dropped substantially. A scattering of native trees is left by the Division of Forestry to preserve some of the natural components of the forest.

The timber tree planting programs of the Division were continued during the two year period. There was considerable variation in areas planted during each year due to changes in funds provided for this program. These sudden changes in funding generally have relatively long-term effects, since there is considerable lag time involved in the collection of seed, development of nursery seedlings, clearing of land, and in the final plantings. Despite these difficulties, the Division managed to successfully plant approximately 5000 acres to timber trees during the period. More than a million and a half timber trees were planted on State forest lands, and hundreds of thousands of timber and windbreak trees and thousands of ornamental and fruit trees were distributed to private planters.

Young planted Queensland Maple trees, Island of Hawaii. This is one of the most promising species for producing high quality hardwood lumber.



Most of the timber trees planted were desirable and proven hardwood species such as Australian red cedar and tropical ash, although in some locations where hardwoods are not suited, various pine species have been planted.

The Central Tree Nursery was expanded during 1963, and additional facilities and equipment were added. This expansion substantially increased the capacity of the nursery, and will allow the production of from 1 to 3 million seedling trees per year. Other forest nurseries on Kauai, Oahu, Molokai, Lanai, and at Hilo on Hawaii, produced a total of about a half million trees during the period. These nurseries are being phased out as the Central Tree Nursery reaches its peak capacity.

Relatively modest sales of forest products continued during the period. Salable products included hapuu (Tree Fern stumps), and koa and monkey pod timber for woodworking and carving. The small pilot charcoal production operation on Kauai was continued into the period.

Fire damage to forest areas was relatively heavy during 1963. Two fires were particularly serious. One was a 1200 acre fire started by the Military in a training area on Oahu. The other was a 4500 acre fire in the Puna area of Hawaii, which spread from a settler's land clearing operations. Fire damage during 1964 was amazingly light, with a total of five fires damaging an area of 14 acres.

A broad range of forest research projects were in progress or completed during the period. A major project was the completion of the forest products survey in 1963. Other investigations included the utilization of tree fern and other forest products, watershed developments, adaptation of exotic species to Hawaiian conditions, and, durability of woods and the use of wood preservatives. A number of research reports have been published covering these research efforts.

Tree fern logs harvested from Waiakea Forest Reserve, Island of Hawaii. Sales of this material bring the State's treasury about \$4,000 per year. More important is the employment and value added by manufacture which this harvesting creates.

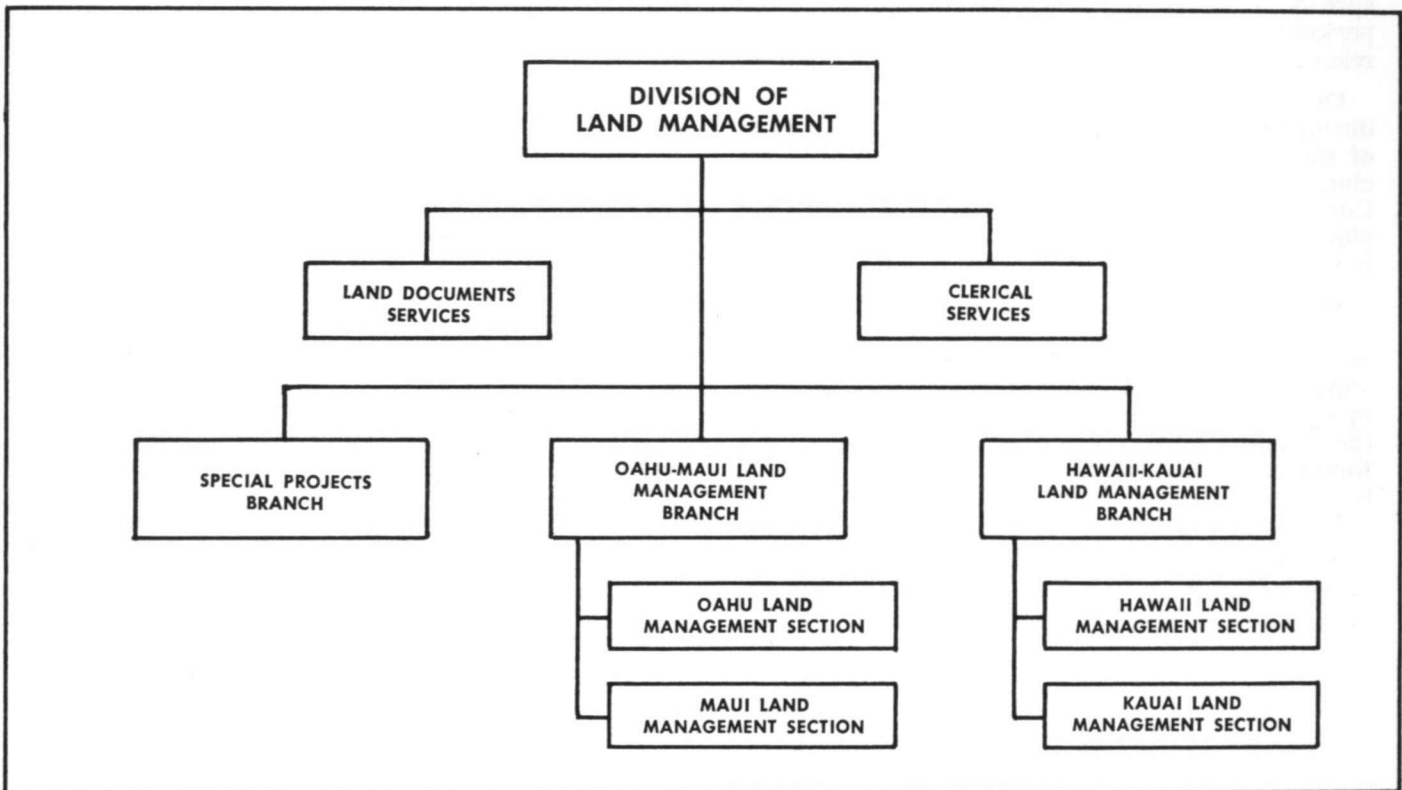


SECTION 5

DIVISION OF LAND MANAGEMENT

JAMES DETOR, Land Management Program Administrator

ORGANIZATION CHART—DIVISION OF LAND MANAGEMENT



The Division of Land Management is responsible, under the overall policy and administrative direction of the Board of Land and Natural Resources, for the acquisition, disposition and management of the public lands of the State. This Office is also an office of record, and the Division is responsible for the maintenance and protection of public records such as Land Patents and other lesser documents issued by the Department.

The principal functions of the Division include the issuance of revocable permits for uses of State lands, the sale of leases for residential, agricul-

tural, commercial or industrial, resort or similar uses of State lands, sales of houselots in fee, and disposition by drawing of agricultural and homestead lands either in fee or by lease. Follow-up inspections and policing for compliance with the terms of various dispositions is also a function of the Division staff.

Passage of Act 32 of the 1962 Legislative Session has had a most significant effect of the operations of the Division relating to the acquisition, disposition, and management of public lands. The Act establishes far more detailed and specific

procedures for normal operations than had been previously in effect, and in some transactions, detailed and specific procedures have extended to include administrative detail. This more complicated processing of land transactions, together with the limitation on personnel established by administrative policy, have combined to create a substantial backlog of unfinished work. This will be difficult to eliminate without additional staffing for the Division.

The period from 1958 to 1962 for public land management was marked by intensive and widespread planning of development projects. The period from 1963 to 1964 shows some of the initial results of this planning.

One of the earliest of the major projects initiated during this period was the combined development of the Waimanalo General Plan. This project included the first phase development of the Urban Core, and also the Farmlot Subdivision, which are planned to provide a balanced urban-farm community development.

In keeping with the recent world-wide interest in oceanography as a key to the virtually unexplored mysteries of the ocean deeps, the State in 1964, set aside an area of approximately 26 acres in the Kewalo Basin area of Fort Armstrong for the eventual development of an Oceanographic Research Laboratory. Specific sites in this area will be provided in accordance with the physical development of the institution.

Approximately 46 acres of Federal surplus land were returned to the State in the Fort Shafter area. Existant tenants are being retained in the

area on a revocable permit basis. Plans are being prepared to develop this site as a first class industrial subdivision.

Major State land dispositions during this period, included making lands available for use by other government agencies, including the City and County of Honolulu. Major projects included City and County flood control projects at Maili, Ule-hawa (Waianae) and at Waimalu. The State also is cooperating with the City and County in providing lands for the massive Palolo Improvement District and for the Kahaluu Cutoff Road projects. The State is also working closely with the Honolulu Development Agency in several phases of Honolulu's extensive urban renewal projects such as at Queen Emma, Kukui, and Kauluwela.

The State has also cooperated with the County Administrations on the Neighbor Islands in the development of public works projects, in development of tourist resort areas, and in the development of parks and recreation areas. One of the major projects of this nature is Project Kaiko'o in Hilo, which is concerned with the effective redevelopment of areas devastated by tsunami action.

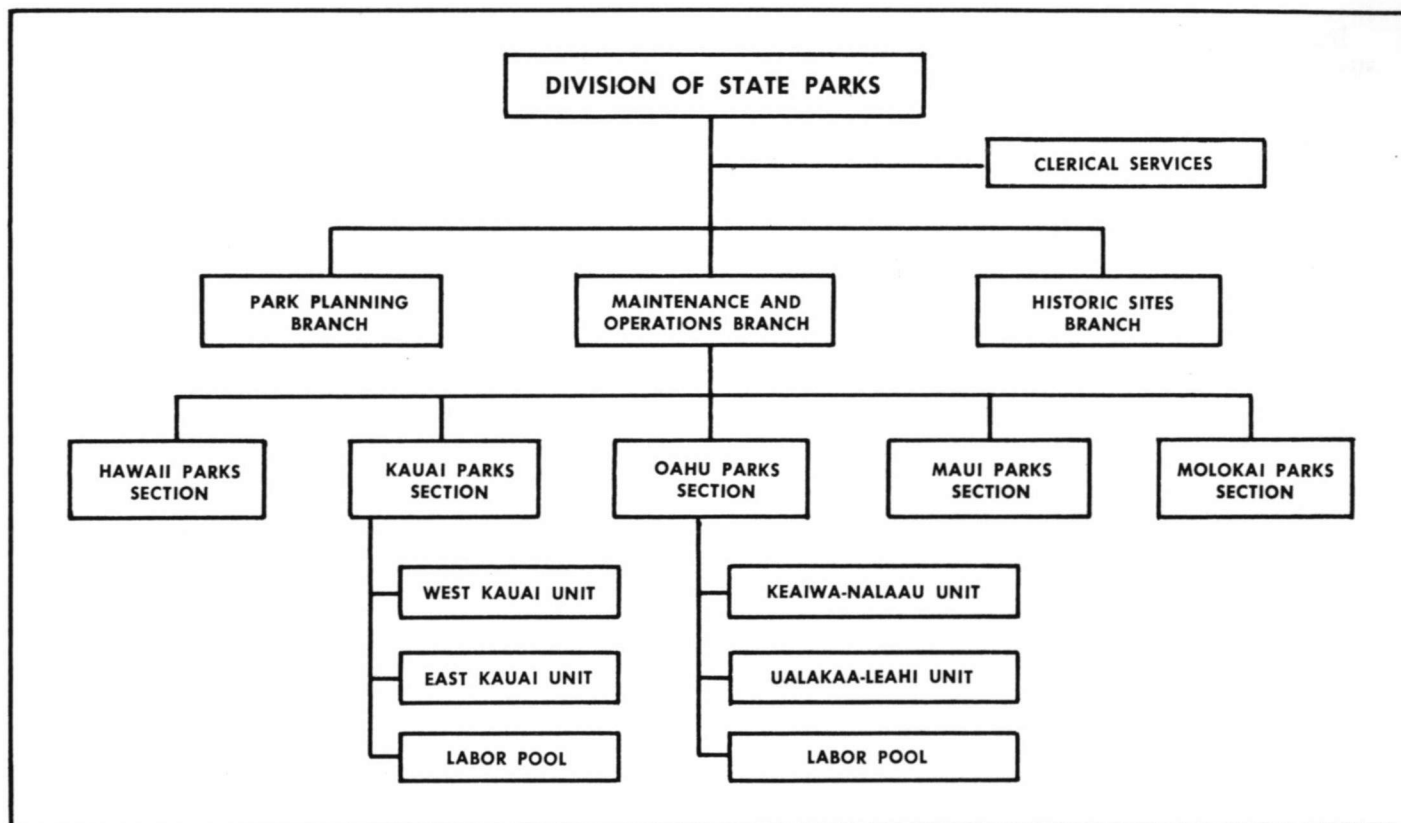
Although the State's program for the return of surplus Federal lands, involving ceded lands held by the Federal government at the time of Statehood, has been handled by the State Attorney General's Office, the Division of Land Management has devoted considerable time to the negotiations for return of these lands to the State, and to preparation of and review of documents involving such transfers.

SECTION 6

DIVISION OF STATE PARKS

RICHARD C. DUNLAP, State Parks Director

ORGANIZATION CHART—DIVISION OF STATE PARKS



The Division of State Parks is responsible for the effective utilization and protection of the recreational areas and resources on State lands. The primary objectives of the Division are the planning, development and management of a system of State Parks, with initial emphasis on the establishment of a large, comprehensively developed park on each of the major islands. The Division proposes to accomplish this goal cooperatively with private concessionaires, through the establishment of State resort facilities with recreational developments, and with ample low-cost accommodations and other conveniences available for inter-island vacationists.

The Division has concentrated its major efforts on the improvement of existing facilities, and on the inclusion of new park and historical sites in



Wailua River State Park, Kauai. Lydgate picnic facility.

the system. Of major interest was the construction of several overnight campgrounds and a number of housekeeping cabin units. New picnic areas were established, and old areas improved. This involved the construction of several modern restrooms, picnic shelters, and a large scale landscaping project. In addition access roads, parking and turning areas, and several walkways were graded and paved, major overlooks were constructed or revamped, and several water systems were built or improved.

Improvements were made to several historical sites by making them more accessible to the public, and more meaningful through interpretation of their archaeological features. A start was made on the major historic restoration project at Lahaina, Maui.

Two new units were added to the parks system, Mauna Kea, Hawaii, and Napali Coast, Kauai. Mauna Kea, Polynesia's highest mountain, is well known for its hiking, hunting, and snow play activities. Facilities at Pohakuloa and at Hale Pohaku provide access and accommodation for visitors. The Napali Coast facilities which are accessible only by boat, include improved boat access, and camping accommodations at Nualolo Kai and



Wailua River State Park, Kauai. Lydgate overnight campground.

Milolii beaches on this spectacular cliff-bound coast.

There have been substantial increases in usage of the State parks by visitors during the past several years, with the increase averaging approximately 50% per year in the period under report.

These increases were realized despite the temporary closure of two popular areas, Iao Valley Park, Maui, and the Lydgate area of Wailua River Park, Kauai, for varying periods of time due to major construction.

The most heavily used parks within the entire system were Kokee-Waimea Canyon and Wailua River Parks, both on Kauai. Both of these parks are now adequately supplied with modern facilities. Studies in the past have indicated that there is a direct relationship between the availability of improvements, and particularly of modern facilities, and the visitor usage of parks. This particular relationship is well illustrated by the spectacular increase in visitor usage experienced at the Wailua River Park at Hilo following improvements in the picnic facilities, and in the appearance of the area through extensive landscaping.

A significant improvement in the management of the parks system was the initiation during the period of seven day per week attention to all of the major park areas. Maintenance service is provided every day to these important tourist and visitor attractions. Maintenance standards are continuing at a high level.

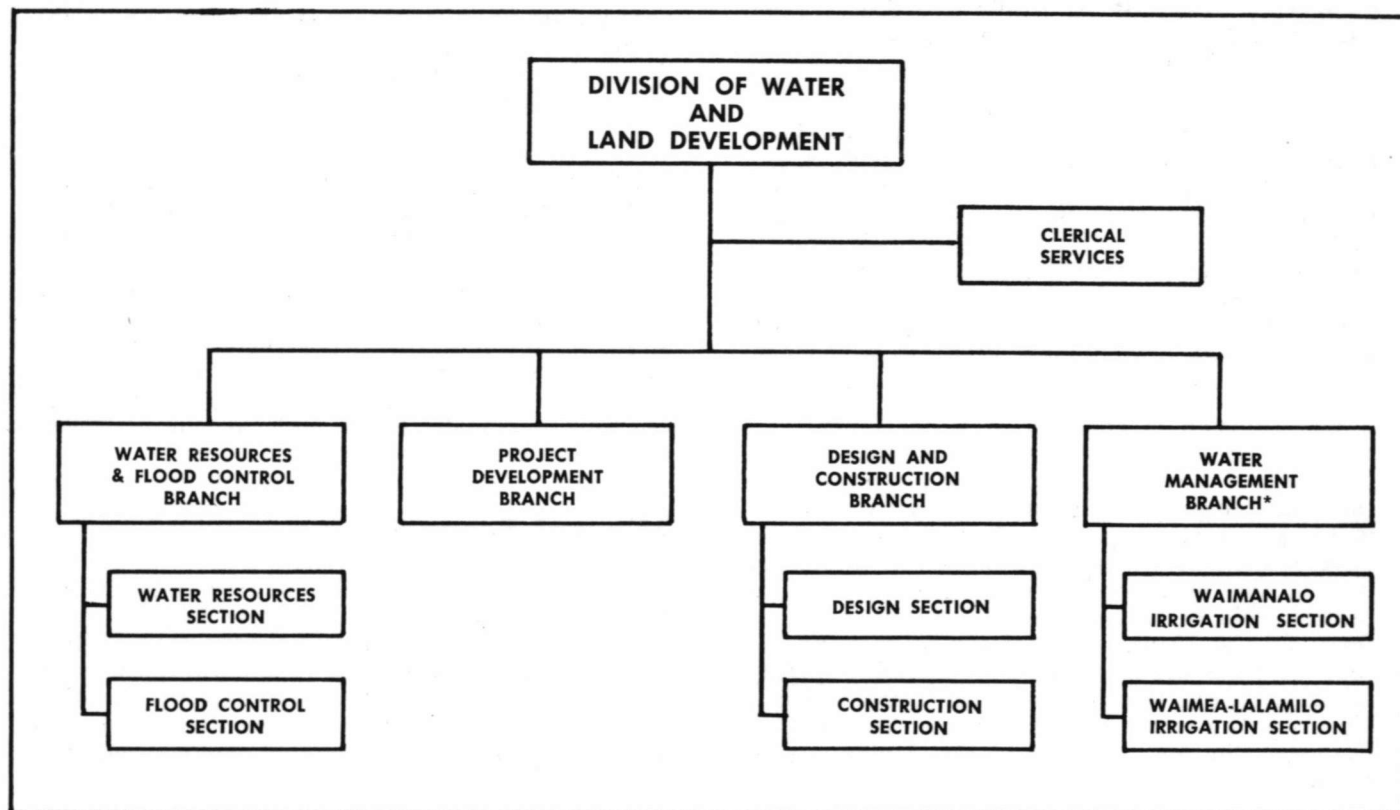
Analysis was conducted for the first time in Hawaii, of the recreational usages in State parks. This study indicates that the most popular activity is sightseeing, either by driving or walking, each engaged in by about 67% of park visitors. About 26% of visitors are picnickers, 12% are boaters, fishermen and hikers amount to about 8% each, almost 2% are hunters, and roughly one percent each engage in swimming and overnight camping. Miscellaneous recreational activities, such as visits to Kokee Museum, sunbathing on Lydgate Beach, or snow play on Mauna Kea attracted less than 5% of the recreation visitors. Since many visitors will engage in more than one activity during a park visit, the total park usage noted above will total more than 100%. It is most interesting to note that park activities in Hawaii's system of parks closely follows the nationwide trends reported in the 1963 Outdoor Recreation Resources Review Commission survey.

SECTION 7

DIVISION OF WATER AND LAND DEVELOPMENT

ROBERT T. CHUCK, Manager-Engineer

ORGANIZATION CHART DIVISION OF WATER & LAND DEVELOPMENT



The Division of Water and Land Development is responsible, within the overall broad functions of the Department of Land and Natural Resources, for the development of the water, mineral, and land resources on public lands.

The primary functions of the Division within this broad field are, for water resources, the collection and dissemination of hydrologic data, comprehensive planning for development, utilization, conservation and replenishment of water sources, the regulation of groundwater use, and the planning, design, and construction of government-financed irrigation, multiple-purpose, and flood control projects, as well as the operation and management of government-owned irrigation systems.

In respect to mineral resources, the Division investigates the location, quantity, quality and value of mineral resources on State lands, gives technical assistance to the Division of Land Management in the administration of State mineral

leases, and is concerned with the location and development of materials required for construction of water and land development, flood control, and multiple-purpose projects.

The Division provides engineering services in respect to the subdivision and improvement of public lands, including State parks and forest reserves, and also provides technical advice for the regulation of land use within conservation districts and leased public lands.

These functions are carried out by four Operating Branches of the Division: Water Resources and Flood Control, Project Development, Design and Construction, and Water Distribution and Maintenance.

Water Resources and Flood Control

As the State water resources agency, the Division, in collaboration with the U. S. Weather Bureau, and with the aid of individual collabora-

tors, collects and publishes climatological data, including rainfall, evaporation, temperature, wind, and solar radiation. The Weather Bureau obtains data from 300 "official" stations. About 1000 "unofficial" or non-standard stations also report some information. Consolidated data of the official stations are published regularly by the Weather Bureau. The Department issues occasional publications of all other rainfall data for Hawaii.

The Division, in cooperation with the U. S. Geological Survey, collects and publishes streamflow data from 277 stations within the State. These data are utilized in water management operations, and in flood control studies.

The Division, also in cooperation with the U. S. Geological Survey and with County Boards of Water Supply, plantations, and well drillers, collects and publishes ground-water information and data from about 1000 shafts, tunnels, wells, and test drilling holes. Such data include salt content, head (water level), temperature, and pumpage or flow, and wastages. The information derived from these reports aids in the studies of ground water sources and in development of these sources for use and in enforcement of ground water laws.

The Division is engaged in a continuing program for the drilling of exploratory wells in various areas of the State. This drilling program serves the dual purpose of obtaining definitive ground-water and geologic data, and contributing to the development of water short areas. An important part of this program is the determination of potential yield of water bearing aquifers by pump tests. Of the 29 wells completed to date, no less than 18 have produced water of potable quality. In carrying out this program, the Division works closely with County Boards of Water Supply, U. S. Geologic Survey, and with the University of Hawaii.

The Division continued its comprehensive water resources planning program during the period. The primary phase of the program now is the development of an inventory of hydrologic data for each major island in the State. The Molokai study is well towards completion, studies for the other islands are making good progress.

Act 34 of the 1961 Legislative Session designated this Department as the State flood control authority, and required that the Department formulate a general plan for flood control for the State.

The Division, in compliance with the directive of the Legislature, carried out a comprehensive study of existing and planned flood control projects within the State. The General Flood Control Plan was published in 1963 as Volume II, Flood Control and Floor Water Conservation in Hawaii. The plan includes description and maps of existing and planned flood control programs, and completed flood control works on each major island in the State. Flood problem areas have been delineated in terms of watersheds and sub-water-

sheds, which have been assigned identification code numbers. Recorded tsunamis and tsunami inundation zones are shown on the maps. Flood problem areas which require protection measures have been selected for planned programs, with consideration being given to the number of recorded floods, susceptibility of the area to flooding, population and land utilization, enhancement of land values and growth potential of areas, and, public health measures. The 1963 Legislature accepted Volumes I and II of Flood Control as a general guide for coordinating and conducting appropriate flood control measures throughout the State, and amended the existing Flood Control by Act 148 which clarifies Flood Control definitions and responsibilities.

Volume I of Flood Control, also published in 1963, implements the flood control information and coordination responsibilities of the Department. It covers flood control terminology, flood damage in Hawaii, flood control measures, multiple-purpose project development, the State-wide flood control program, and State-County relationships. In connection with the overall flood control program of the State, the Division carried out widening, snagging, deepening and widening of portions of Hanalei River, and clearing of Waioli Stream on the Island of Kauai.

Mineral Resources

Investigations of Hawaii's bauxite deposits, authorized and funded by the State Legislature in 1957, were concluded, and final reports published. Studies of reclamation and rehabilitation of strip-mined lands have been carried out by the University of Hawaii. This Division has been concerned primarily with economic geology and metallurgical aspects of these resources.

U. S. Geological Survey conducted preliminary studies of the reserves of potentially minable bauxite, and to determine if further work would be justified to delineate the reserves. Following up the preliminary study, the USGS undertook a four-year study, supported in part by the State, of the economic geology of the Kauai and Maui deposits. The report of this joint study was published in 1963. General conclusions of the report indicate that exploitation of these deposits does not appear to be economically feasible at this time.

In conjunction with the economic geology study, the U. S. Bureau of Mines conducted an investigation into certain metallurgical aspects of these deposits, and particularly into the possibilities of beneficiation or upgrading of the ore deposits, and the recovery of aluminum, iron, and titanium from the bauxite. These detailed studies have been completed, and reported by the Bureau of Mines in 1962. In general, the report states that the recovery of alumina is "encouraging," but that the exploratory research into iron and titanium recovery was "unsuccessful."

Under a cooperative agreement with the U. S. Bureau of Mines, the Division aids the Bureau in obtaining reports on the production of minerals and mineral products within the State. Annual production of non-metallic minerals and mineral products, principally cement, has shown continual increases in the past several years. Other construction materials included in the production statistics include pumice, sand and gravel, and clay. Gemstones products include alivine and black coral. Solar-evaporated salt is also produced.

Water Development

Development of water sources for irrigation and domestic use, and construction of distribution systems for water comprise one of the most important functions of the Division.

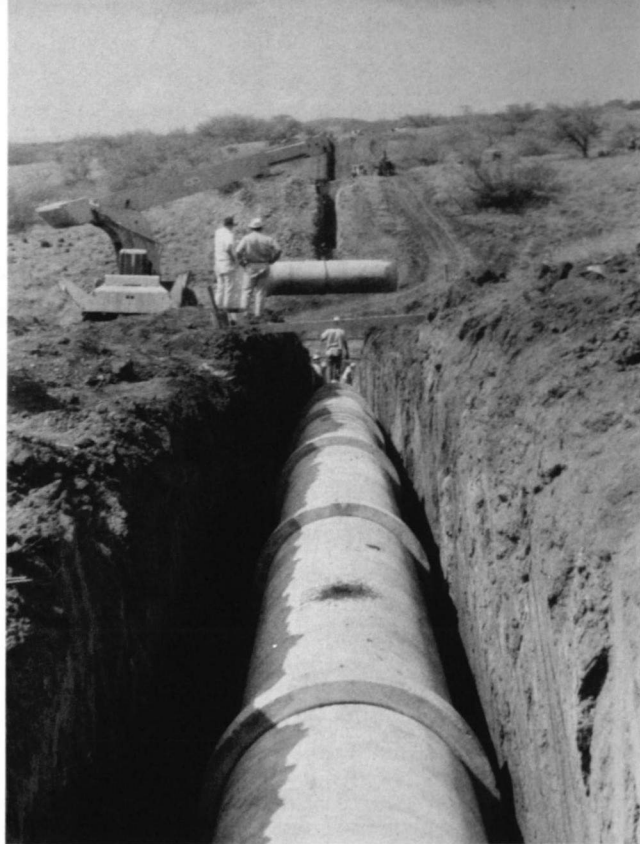
One of the major projects now in progress is the development of the Molokai Irrigation Project, which covers the digging of a transmission and water development tunnel 26,824 feet long, construction of diversion works in Waikolu Valley (dam, pipelines, and footbridge) and three wells tapping dike-confined water, and several miles of transmission pipeline connecting the tunnel to the service areas. Also proposed for development are several miles of distribution lines, and a storage reservoir to provide water to the service area.

The Molokai Irrigation Project is financed in part by a loan of \$4.5 million from the Bureau of Reclamation, and in part by State funds. The total cost of the project at completion is estimated at \$9.9 million.

In 1963 and 1964, the Division of Water and Land Development, in conjunction with the Division of Fish and Game, the U. S. Fish and Wildlife Service, the Division of State Parks, and the U. S. National Parks Service, made a detailed engineering and economic feasibility study of a proposed project to develop water for irrigation, hydroelectric power, fish and wildlife, and recreational uses in the Alakai Swamp area of Kokee on the Island of Kauai. This is the first multiple-purpose water development project proposed for development within the State.

The proposed project area covers approximately the western third of the Island of Kauai, including Hawaiian Homes Land and public lands administered by the Department of Land and Natural Resources, all presently under lease to Kekaha Sugar Company. The project is considered economically feasible, and is thus eligible for federal loans and grants to aid in construction. Legislation has been introduced into Congress for appropriations for irrigation and power loans, and grants for fish and wildlife, and recreational purposes.

The Division was also involved during the period in improvement of the existing Hanalei and Wainiha irrigation systems on Kauai, and in planning the construction of an irrigation system to serve the Kalaheo farming area, also on Kauai.



Installing 30-inch concrete pipe transmission main for Molokai irrigation system.

The Division has continued to play a significant role in the development of water sources and transmission lines for domestic water supplies in the Kona, Waiakea-Uka, Pahoa and Kawaihae areas of Hawaii, the Waimea-Kekaha, Koloa, Wailua-Kapaa, Hanalei, and Lihue areas of Kauai, and the Lahaina District of Maui. Improvements to domestic systems in those areas has fostered residential and resort developments and general economic growth.

Land Development

Engineering studies and construction drawings for Phase I of an industrial subdivision of University of Hawaii lands on Sand Island have been completed. Proposals for the development of a foreign trade zone complex somewhere in the Honolulu area have delayed construction of this project.

Preliminary plans are being prepared for the development of the proposed Hilo Industrial Development, and preliminary plans have been completed for development of the National Guard area.

Preliminary plans have also been prepared and approved for houselot and industrial subdivisions on the Kapaa Swamp Development on the Island of Kauai. Specifications and construction plans are being prepared for nine industrial lots.

Construction of Phase I of the Magic Island Development, Diamond Head Peninsula, was initiated, and was in progress at the end of 1964. Consultants are preparing plans for a portion of Central Island of this project, and the Waterways



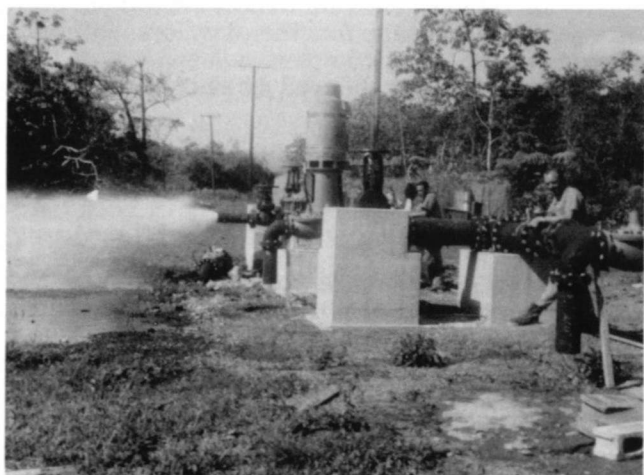
Constructing 250,000-gallon reinforced concrete water tank on Maka Ridge, Hanalei, Kauai.

Experiment Station of the U. S. Army Corps of Engineers is preparing a model study of the effects of this development of Magic Island on tides and wave action.

Residential subdivisions of State land completed during the period of this report, or in the planning, design, or construction stage include: Diamond Head Houselots, Kuliouou Houselots, and Waimanalo Core Development on the Island of Oahu; Wahikuli Houselots on Maui; Panaewa Farm and Houselots Subdivision, Waiakea Houselots, Waiakea Camp 2, University Heights (Hilo) Houselots,

and Lalamilo Houselots on the Island of Hawaii; and Kapaa Swamp Development, Waimea Heights Houselots, Wailua Houselot Development, and Weliweli Houselots on the Island of Kauai.

Farmlot subdivisions of State lands in some phase of planning, development, or construction during the two-year period include: Waimanalo Agricultural Subdivision on the Island of Oahu, Molokai Farmlots, Panaewa Farm and Houselots Subdivision, Hamakua Pasture and Land Development, Volcano Farmlots, and Lalamilo Farmlots Subdivision on the Island of Hawaii.



Conducting pump efficiency tests at Panaewa Well site, Hilo, Hawaii.

Irrigation Systems

The Waimanalo Irrigation System, operated by this Division and its predecessors since 1953, was initially developed to irrigate sugar cane crops, and has been adapted to irrigate small farms. The system is designed to irrigate a total of 1400 acres. Approximately 200 acres were added to the existing system during 1964, increasing the total area served to 925 acres. Total water sales were increased in 1964 by the increase in acreage served by the system.

The number of farms served by the Waimea-Lalamilo Irrigation system increased from a total of 15 in 1962, to a total of 24 in 1964. Acreage served increased from about 53 acres, to about 140 acres. Sales of water increased commensurately with the increase in acreage covered by the system.

SECTION 8

STATISTICAL APPENDIX

DIVISION OF CONVEYANCES

Table 1. NUMBER OF DEEDS FILED AND RECORDED, APPROXIMATE VALUE OF LAND CONVEYED, AND TOTAL FILING AND RECORDING FEES RECEIVED BY THE DIVISION OF CONVEYANCES: 1955 TO 1964

Fiscal year	Number of deeds filed and recorded	Approx. value of land conveyed (dollars)	Total filing and recording fees received (dollars)
1955.....	8,553	55,332,500.00	190,669.60
1956.....	9,169	60,118,500.00	198,921.70
1957.....	8,423	58,049,500.00	188,092.10
1958.....	8,364	63,845,500.00	211,793.35
1959.....	9,440	112,377,000.00	267,143.20
1960.....	10,077	121,464,000.00	292,247.43
1961.....	9,481	119,661,400.00	270,033.95
1962.....	9,045	109,942,500.00	279,283.70
1963.....	11,061	101,987,000.00	317,092.90
1964.....	11,680	102,232,000.00	360,685.90

Table 2. DOCUMENTS RECORDED AND FILED AND LAND COURT CERTIFICATES OF TITLE ISSUED BY THE DIVISION OF CONVEYANCES: 1955 TO 1964

Fiscal year	Documents recorded and filed			Land court certificates of title issued
	Total	Regular system	Land Court system	
1955.....	36,913	23,851	13,062	3,279
1956.....	39,422	25,346	14,076	3,748
1957.....	37,500	24,265	13,235	3,270
1958.....	40,536	26,132	14,404	3,293
1959.....	50,875	29,422	21,453	4,235
1960.....	52,243	32,455	19,788	4,270
1961.....	48,529	32,039	16,490	3,817
1962.....	52,013	35,416	16,597	3,524
1963.....	58,803	40,211	18,592	4,619
1964.....	67,004	42,273	24,731	5,884

Table 3. RECEIPTS AND DISBURSEMENTS OF THE DIVISION OF CONVEYANCES: 1955 TO 1964

Fiscal year ending June 30	Receipts (dollars)			Disbursements (dollars)		
	Total	Regular system	Land Court system	Total	Regular system	Land Court system
1955.....	190,669.60	141,501.65	49,167.95	171,029.33	102,816.43	68,212.90
1956.....	198,941.60	145,984.90	52,956.70	180,725.80	103,759.68	76,966.12
1957.....	188,617.10	139,349.70	49,367.40	178,565.71	107,905.61	70,660.10
1958.....	211,793.35	144,281.20	67,512.15	199,646.03	119,547.44	80,098.59
1959.....	267,143.20	170,809.65	96,333.55	201,031.28	118,092.07	82,939.21
1960.....	290,061.13	197,467.68	92,593.45	229,428.72	140,430.33	88,998.39
1961.....	270,033.35	190,339.80	79,693.55	240,162.33	151,859.96	88,302.37
1962.....	279,283.70	202,179.05	77,104.65	241,078.16	147,697.94	93,380.22
1963.....	314,485.90	223,718.50	90,767.40	257,510.97	155,804.07	101,706.90
1964.....	357,938.40	238,491.10	119,447.30	236,623.99	149,042.46	87,581.53
Ten year total	2,977,586.88	2,075,537.98	902,148.90	2,343,893.07	1,406,864.76	937,028.31

Table 4. VALUE OF PROPERTY TRANSFERS IN THE STATE OF HAWAII, BY COUNTIES, 1956-1964⁽¹⁾

Year ⁽²⁾	Maui		Honolulu		Hawaii		Kauai		State of Hawaii
	Per Cent of State	Amount	Per Cent of State	Amount	Per Cent of State	Amount	Per Cent of State	Amount	
1964	7.63	7,802,500	83.37	85,231,235	7.75	7,923,200	1.25	1,275,100	102,240,035
1963	3.50	3,569,500	81.00	82,604,000	14.21	14,494,000	1.29	1,319,500	101,987,000
1962	2.46	2,719,500	87.96	97,231,500	8.55	9,452,000	1.03	1,139,500	110,542,500
1961	5.07	6,063,700	86.64	103,683,500	6.99	8,362,200	1.30	1,552,000	119,661,400
1960	2.50	3,036,500	90.06	109,392,000	6.45	7,835,000	0.99	1,200,500	121,464,000
1959	1.45	1,632,000	91.95	103,324,000	5.32	5,977,000	1.28	1,444,000	112,377,000
1958	3.67	2,342,000	88.94	56,781,000	4.91	3,136,000	2.48	1,586,500	63,845,500
1957	2.48	1,442,000	92.47	53,671,500	4.04	2,347,500	1.01	588,500	58,049,500
1956	2.66	1,598,000	92.97	55,894,500	3.30	1,981,500	1.07	644,000	60,118,000
Per Cent Change '56-'65	..	252.38	..	43.31	..	542.06	..	367.31	68.80

⁽¹⁾ Includes only sales of property. Does not include bequests, gifts, etc.

⁽²⁾ Fiscal years ending June 30.

Source: State of Hawaii, Department of Land and Natural Resources, Division of Conveyances.

Report prepared by:
Economic Research Center
University of Hawaii

DIVISION OF FISH AND GAME

Table 1. FRESHWATER GAME FISHING LICENSE AND HUNTING LICENSE STATISTICS 1953-54 TO 1963-64

Years ending June 30	Freshwater Game Fishing		Hunting	
	Number Issued	Collections (dollars)	Number Issued	Collections (dollars)
1953-1954.....	1,734	4,141.66	4,514	21,751.25
1954-1955.....	1,950	4,595.41	4,522	21,634.35
1955-1956.....	2,288	4,911.37	4,742	22,832.57
1956-1957.....	2,595	5,402.41	5,179	24,942.25
1957-1958.....	3,320	7,191.39	5,290	25,738.99
1958-1959.....	2,383	4,885.61	5,222	25,094.23
1959-1960.....	1,682	3,638.23	5,290	25,564.25
1960-1961.....	3,014	6,339.94	6,214	30,202.25
1961-1962.....	4,209	8,824.01	6,924	33,897.72
1962-1963.....	4,264	8,983.57	7,095	34,441.65
1963-1964.....	5,269	11,225.75	7,766	38,180.00

Table 2. COLLECTIONS—ALL SOURCES: 1959-60 TO 1963-64

Years ending June 30	All Collections	Commercial Fishing	Freshwater Game Fishing	Hunting	Miscellaneous licenses, permits and other income
1963-64.....	\$63,605.81	\$11,223.25	\$11,225.75	\$38,180.00	\$ 2,976.81
1962-63.....	68,128.14	11,057.90	8,983.57	34,441.65	13,645.02
1961-62.....	57,158.54	12,761.51	8,824.01	33,897.72	1,675.30
1960-61.....	50,517.92	13,160.00	6,339.94	30,202.25	815.73
1959-60.....	43,520.02	13,414.04	3,638.23	25,564.25	903.50

Table 3. COMMERCIAL FISHING LICENSES: 1963-64

Kind of License	Number	Collections (dollars)
Total.....	1,267	11,223.25
Commercial fishing—resident.....	805	8,050.00
Commercial fishing—Non-resident.....	6	120.00
Power boat permit.....	344	2,814.75
Row boat and sail boat permit.....	29	31.00
Boat plates (pair).....	83	207.50

Table 4. FRESHWATER GAME FISHING LICENSES: 1963-64

County where issued	Total		Resident		Juvenile		Other*	
	No.	Amount (dollars)	No.	Amount (dollars)	No.	Amount (dollars)	No.	Amount (dollars)
The State.....	5,269	11,225.75	4,304	10,246.24	933	893.02	32	86.49
Hawaii.....	245	482.14	163	398.09	81	79.05	1	5.00
Honolulu.....	4,319	9,427.30	3,695	8,785.15	597	570.28	27	71.87
Kauai.....	609	1,155.32	397	948.41	209	199.79	3	7.12
Maui.....	96	160.99	49	114.59	46	43.90	1	2.50

* Includes 7 non-resident (\$24.50) and 26 tourist licenses (\$61.99)

Table 5. MISCELLANEOUS FISHING LICENSES, PERMITS AND SALES: 1963-64

Type	Number	Amount
Total	233	\$2,187.12
Mullet License	70	410.00
Lobster License	9	16.00
Commercial Bait Permit	55	55.00
Clam License	2	10.00
Sale of Confiscated Legal Fishing Gear	2	10.00
Duplicate Game Fishing License	94	49.12
Duplicate Commercial Fishing License	1	.50
Sale of Tilapia (vegetation control) .....	..	137.50
Sale of Tilapia Bait .....	..	1,499.00

Table 6. HUNTING LICENSES: 1963-64

County where issued	Number of Licenses			Collections (dollars)		
	Total	Resident	Non Resident	Total	Resident	Non Resident
The State	7,766	7,628	138	38,180.00	36,841.50	1,338.50
Hawaii	2,071	1,988	83	10,656.50	9,850.00	806.50
Honolulu	2,966	2,923	43	14,406.25	13,990.25	416.00
Kauai	1,004	999	5	4,818.75	4,770.25	48.50
Maui	1,725	1,718	7	8,298.50	8,231.00	67.50

Table 7. MISCELLANEOUS GAME LICENSES, SALES, DONATIONS AND RENTALS: 1963-64

Type	Number	Amount (dollars)
Total	906	789.69
Game Bird Farm License	21	21.00
Sale of publication "Game Birds in Hawaii"	59	29.75
Duplicate Hunting Licenses	354	189.81
Sale of Confiscated legal hunting gear	5	72.00
Donations—Nene Trust Fund	2	12.13
Rental of hunting cabins, Hawaii	465	465.00

Table 8. MISCELLANEOUS PERMITS (NO CHARGE): 1963-64

Type	Number
Permit for destruction of wild birds injurious to crops	5
Scientific collecting permit	16
Field trial permit (hunting)	7
Permit for entry on bird sanctuaries	25
Fish and wildlife importation permit	6
Aquarium fish permit	17

Table 9. FEDERAL AID FUNDS

Type	(dollars) Amount
Pittman-Robertson Federal Aid in Wildlife Restoration Fund	59,028.85
Dingell-Johnson Federal Aid in Fish Restoration Fund	40,470.03
Nene Restoration Project Fund	15,000.00
Hawaiian Islands National Wildlife Refuge Fund	2,788.48
Total	117,287.36

Table 10. COMMERCIAL FISH LANDINGS BY ISLAND, STATE OF HAWAII, FISCAL YEAR — JULY, 1963 TO JUNE, 1964

Island	Sea Catch		Pond Catch		Total	
	Pounds	Value	Pounds	Value	Pounds	Value
Hawaii.....	1,596,253	\$ 356,633	3,076	\$ 1,048	1,599,329	357,681
Maui.....	985,258	174,148	....	....	985,258	174,148
Lanai.....	15,053	4,657	....	....	15,053	4,657
Molokai.....	22,051	12,304	6,707	3,467	28,758	15,771
Oahu.....	9,268,472	2,081,117	52,762	40,286	9,321,234	2,121,403
Kauai.....	149,491	64,663	....	....	149,491	64,663
TOTAL.....	12,036,578	\$2,693,522	62,545	\$44,801	12,099,123	\$2,738,323

Table 11. COMMERCIAL FISH LANDINGS BY MONTH, STATE OF HAWAII, FISCAL YEAR — JULY, 1963 TO JUNE, 1964

Month 1963	Sea Catch		Pond Catch		Total	
	Pounds	Value	Pounds	Value	Pounds	Value
July.....	1,900,463	\$ 305,957	1,742	\$ 996	1,902,205	\$ 306,953
August.....	2,552,379	382,799	3,645	2,319	2,556,024	385,118
September.....	902,863	200,798	4,894	3,688	907,757	204,486
October.....	686,324	180,184	4,535	3,607	690,859	183,791
November.....	624,885	191,668	8,217	6,372	633,102	198,040
December.....	553,354	248,654	10,476	7,895	563,830	256,549
1964						
January.....	686,558	169,442	7,660	5,763	694,218	175,205
February.....	520,232	171,917	3,779	2,561	524,011	174,478
March.....	664,657	220,497	5,696	2,846	670,353	223,343
April.....	954,194	212,100	2,851	1,648	957,045	213,748
May.....	843,761	193,302	3,661	2,297	847,422	195,599
June.....	1,146,908	216,204	5,389	4,809	1,152,297	221,013
TOTAL.....	12,036,578	\$2,693,522	62,545	\$44,801	12,099,123	\$2,738,323

Table 12. COMMERCIAL FISH CATCH BY SPECIES, STATE OF HAWAII — FISCAL YEAR JULY 1963 TO JUNE 1964

Sea Catch by Species					
Species	Pounds	Value	Species	Pounds	Value
Aku (Skipjack)	8,533,567	\$1,156,882	Opelu	375,845	122,415
Ahi (Yellowfin)	430,424	163,815	Palani	5,208	1,222
Ahipalaha (Albacore)	12,661	4,125	Pualu	12,365	\$ 2,388
Ahi (Bigeye)	772,095	461,794	Puhi (eel)	2,353	143
Kawakawa	64,650	9,333	Puhi (white eel)	3,696	374
Swordfishes (Misc.)	382	57	Uhu	2,972	879
Stripe Marlin	398,572	118,101	Ukikiki (Gindai)	2,472	1,093
Pacific Blue Marlin*	154,777	45,610	Uouoa	282	184
Black Marlin**	3,784	1,701	Uu (Menpachi)	15,094	10,638
Broadbill	25,442	4,339	Weke	78,083	32,969
A'u lepe (Sailfish)	5,489	896	Malu	2,817	1,668
Mahimahi	105,232	49,673	Saba	1,397	385
Ono	27,556	5,010	Crab (Papai-Misc.)	1,556	440
Hapuupuu	30,240	11,895	Crab (Kona)	11,666	6,109
Kahala	101,262	28,956	Crab (Kuahonu)	3,938	2,793
Kalekale	23,401	11,536	Crab (Moala)	1,427	507
Omilu	4,967	2,816	Crab (Samoan)	64	42
Opakapaka	103,965	50,252	Opae (Shrimp)	230	351
Uku	80,510	32,526	Ula (Lobster)	10,725	8,574
Ulaula (Ehu)	27,411	20,617	Ulapapapa	14	7
Ulaula Koae (Onaga)	47,402	44,379	Hee (Octopus)	8,765	4,838
Ulua	115,932	44,900	Muhee (True Squid)	5,224	1,787
Weke-ula	12,888	7,987	Opihi (Limpet)	18,336	8,513
Aawa	1,849	282	Honu (Turtle)	1,433	342
Aholehole	2,312	1,531	Misc.	51,444	15,700
Akule	104,155	80,845	TOTAL	12,036,578	\$2,693,522
Hahalalu	34,756	24,045			
Amaama (Mullet)	18,042	14,425	Pond Catch by Species		
Awa	7,546	2,686	Species	Pounds	Value
Aweoweo	2,686	1,103	Ulua	777	\$ 797
Humuhumu (Hage)	1,586	509	Aholehole	3,333	1,297
Kaku (Barracuda)	2,871	686	Amaama (Mullet)	29,518	27,828
Kala	44,255	4,536	Awa	12,281	7,102
Kawelea	7,747	2,772	Awaawa	3,598	1,228
Kumu	11,910	11,257	Kaku	812	642
Laenihi (Nabeta)	1,374	954	Moi	138	124
Lehi	987	343	Oio	1,414	579
Maomao (Mamo)	3,428	1,255	Crab (Papai-Misc.)	2,536	802
Manini	9,700	4,271	Crab (Kuahonu)	1,807	1,356
Moana	18,139	10,999	Crab (Moala)	633	254
Moi	16,737	13,873	Crab (Samoan)	965	726
Moelua	7,189	4,033	Clam (Olepe)	4,428	1,991
Nenue	6,636	2,722	Misc.	305	75
Nohu (Hogo)	1,601	802	TOTAL	62,545	\$ 44,801
Oio	31,057	8,032	GRAND TOTAL	12,099,123	\$2,738,323

* *Makaira ampla* (Called black marlin by Hawaiian Fish and Game Division prior to July, 1962)

** *Istiompax marlina* (Called silver marlin by Hawaiian Fish and Game Division prior to July, 1962)

Table 13. HUNTER USE AND GAME HARVEST ON PUBLIC HUNTING AREAS IN 1963-1964

G A M E H A R V E S T												
Area	Acreage	Hunter Trips	Pig	Goat	Deer	Sheep	Pheasant	Chukar	Quail	L. Dove	B. Dove	Pigeon
KAUAI												
1. Puu Ka Pele.....	9,000 }											
2. Na Pali-Kona	14,000 }	403	9	100			21					
3. Kalalau	950											
4. Kekaha	5,000	290					103	35	4			
5. Poipu	800	39					32					
6. Kalepa	750	22					5					
7. Wailua	1,900	91					26					
8. Waimea Canyon...	24,000	505	100	304								
OAHU												
9. Kuaokala-Mokuleia	7,015	1,071					13			9	19	
10. Waimanalo	150	545	150	12			8			205	553	
11. Sand Island	5	380								207	538	
MAUI												
12. Kula	6,000 }											
13. Kahikinui	12,000 }	378					183	398	12			
LANAI												
14. Lanai	60,000	2,133			603		451		57	246	672	
MOLOKAI												
15. Molokai Ranch ...	26,500 }											
16. Kaunakakai	3,250 }	1,111			154		174		1,075	117	937	
17. Hawaiian Homes ..	14,429 }											
HAWAII												
18. Mauna Kea	80,102	1,759	240	2		376	85	904	212			5
19. Pohakuloa	15,000	316	9	2		3	44	111	157	1	1	7
20. Puako	8,000	464								1,898	1,995	
21. Mauna Loa	186,511	11		1								
22. Puuanahulu	31,000	259	23	2		97	67					
23. Kaohe	6,440	286	2			25	827	35	89	1	2	5
24. Parker Ranch	10,000	815						68	558	3	4	16
Totals.....	522,789	11,219	533	423	757	501	2,039	1,551	2,164	2,687	4,721	33
2,214 (Mammals) 13,197 (Birds)												

Table 14. FISHING AND HUNTING VIOLATIONS: 1963-1964

Type of Violation	No. of Violations
FISHING VIOLATIONS	
Fishing with and possession of fine mesh thrownet	3
Fishing with fine mesh nets (Drag, gill, dip, etc.)	5
Taking and possession of lobsters with eggs; under legal weight; spearing; and during closed season	17
Taking and possession of oysters during closed season	3
Taking sea mullet during closed season	11
Possession of squid below legal weight	4
Fishing in restricted area	9
Possession of Kona crabs with eggs	3
Total Fishing Violations	55
HUNTING VIOLATIONS	
Hunting without license	6
Hunting and possession of game birds during closed season	8
Unlawful carriage of firearms	2
Carrying and discharging firearms on public highway	3
Hunting in forest reserve (watershed) without permit	2
Hunting game in a Public Shooting Ground prior to an open season	1
Carrying loaded firearm in a vehicle on a Public Shooting Ground	4
Hunting Axis deer at night	6
Total Hunting Violations	32
TOTAL FISHING AND HUNTING VIOLATIONS	87

Table 15. ARRESTS AND DISPOSITIONS: 1963-1964

Subject	The State	Hawaii County	Honolulu County	Kauai County	Maui County
Arrests	83	4	53	2	24
Number of Charges	87	5	53	2	27
Bail Forfeitures	13	3	4(4)*	1	5
Released to juvenile authorities	9	..	7	..	2
Released to military authorities	1	..	1	..	..
Cases Pending	3	..	3	..	..
Convictions	59	2	35	1	21
Fines	18	..	4(3)*	1	13(1)*
Suspended Fines	8	..	8	..	..
Split Fines (fines and suspended fines) ..	31	2	22	..	7
Jail Sentence and suspended jail sentence	5	..	4	1	..
Nolle Prosequi	1	..	..	..	..

*Cases disposed from previous fiscal

Table 16. INCOME FROM ARRESTS: 1963-1964

(Revenues credited to county in which arrest was made)

County	Fines (dollars)	Bail Forfeitures (dollars)	Suspended Fines (dollars)
The State	1,720	350	2,265
Hawaii County	200	75	800
Honolulu County	720	200	940
Maui County	775	60	525
Kauai County	25	15	....

Table 1. FRESHWATER SPORT FISHING LICENSE AND HUNTING LICENSE STATISTICS: 1952-53 TO 1962-63

Years	Freshwater sport fishing		Hunting	
	Number Issued	Collections (dollars)	Number Issued	Collections (dollars)
1952-53	2,617	6,268.11	4,695	22,636.00
1953-54	1,734	4,141.66	4,514	21,751.25
1954-55	1,950	4,595.41	4,522	21,634.35
1955-56	2,288	4,911.37	4,742	22,832.57
1956-57	2,595	5,402.41	5,179	24,942.25
1957-58	3,320	7,191.39	5,290	25,738.99
1958-59	2,383	4,885.61	5,222	25,094.23
1959-60	1,682	3,638.23	5,290	25,564.25
1960-61	3,014	6,339.94	6,214	30,202.25
1961-62	4,209	8,824.01	6,924	33,897.72
1962-63	4,264	8,983.57	7,095	34,441.65

Table 2. COLLECTIONS—ALL SOURCES 1958-59 TO 1962-63

Years	All collections	Commercial fishing	Freshwater sport fishing	Hunting	Miscellaneous licenses, permits and other income
1962-1963	\$68,128.14	\$11,057.90	\$8,983.57	\$34,441.65	\$13,645.02
1961-1962	57,158.54	12,761.51	8,824.01	33,897.72	1,675.30
1960-1961	50,517.92	13,160.00	6,339.94	30,202.25	815.73
1959-1960	43,520.02	13,414.04	3,638.23	25,564.25	903.50
1958-1959	45,919.98	14,915.29	4,885.61	25,094.23	1,024.85

Table 3. COMMERCIAL FISHING LICENSES: 1962-63

Kind of License	Number		Collections (dollars)
	Total		
Commercial fishing—resident	801		8,010.00
Commercial fishing—non-resident	7		140.00
Power boat permit	337		2,688.90
Row boat and sail boat permit	29		29.00
Boat plates (pair)	76		190.00

Table 4. FRESHWATER GAME FISHING LICENSES: 1962-63

County where issued	No.	Total	Resident		Juvenile		Other*	
		Amount (dollars)	No.	Amount (dollars)	No.	Amount (dollars)	No.	Amount (dollars)
The State	4,264	8,983.57	461	8,186.23	794	762.97	9	34.37
Hawaii	638	1,330.15	471	1,160.95	166	164.20	1	5.00
Honolulu	2,920	6,329.58	534	5,952.74	383	364.47	3	12.37
Kauai	550	1,005.90	339	793.05	206	195.85	5	17.00
Maui	156	317.94	117	279.49	39	38.45	..	..

* Includes 5 non-resident licenses (\$24.50) and 4 tourist licenses (\$9.87)

Table 5. MISCELLANEOUS FISHING LICENSES, PERMITS AND SALES: 1962-63

Type	Number	Amount
Total		\$2,569.35
Mullet license	71	407.50
Lobster license	11	16.50
Commercial bait permit	55	55.00
Clam license	2	6.00
Sale of confiscated legal fishing gear	1	7.00
Duplicate commercial fishing license .....	..	...
Duplicate sport fishing licenses	50	23.85
Sale of services (MV MAKUA)	1	45.00
Sale of Tilapia (for vegetation control) .....	..	37.50
Sale of Tilapia bait .....	..	1,971.00
Sale of Fish caught in Tuna Gill Netting Technique.....	..	3,582.64*

* Non-Revenue, deposited into General Fund

Table 6. HUNTING LICENSES: 1962-63

County where issued	Number of licenses			Collections (dollars)		
	Total	Resident	Non Resident	Total	Resident	Non Resident
The State	7,095	6,931	164	34,441.65	33,208.20	1,233.45
Hawaii	2,106	1,981	125	10,451.15	9,581.70	869.45
Honolulu	2,740	2,705	35	13,150.25	12,824.75	325.50
Kauai	859	859	0	4,097.50	4,097.50	....
Maui	1,390	1,386	4	6,742.75	6,704.25	38.50

Table 7. MISCELLANEOUS GAME LICENSES, SALES, DONATIONS AND RENTALS: 1962-1963

Type	Number	Amount (dollars)
Total		\$11,075.67
Game bird farm license.....	23	23.00
Sale of publication "Game Birds in Hawaii"	123	65.50
Duplicate hunting licenses	248	123.31
Sale of confiscated legal hunting gear	16	283.40
Donations	3	9,828.46
Rental of hunting cabins, Hawaii	752	752.00

Table 8. MISCELLANEOUS PERMITS (NO CHARGE): 1962-63

Type	Number
Permits for destruction of wild birds injurious to crops	3
Scientific collecting permit	13
Hunting field trial permit	6
Permit for entry on bird sanctuaries	4
Fish and wildlife importation permit	7
Aquarium fish permit	8

Table 9. FEDERAL AID FUNDS

Type	Amount (dollars)
Pittman-Robertson Federal Aid in Wildlife Restoration Fund	50,197.51
Dingell-Johnson Federal Aid in Fish Restoration Fund	56,768.66
Nene Restoration Project Fund	15,000.00
Hawaiian Islands National Wildlife Refuge Fund	759.06
Total	122,725.23

Table 10. COMMERCIAL FISH LANDINGS BY MONTH: JULY, 1962 THROUGH JUNE, 1963

Month	Sea Catch Pounds	Value	Pond Catch Pounds	Value	Total Pounds	Value
July, 1962	2,072,369	\$ 313,631	5,403	\$ 4,235	2,077,772	\$ 317,866
August	1,199,784	229,092	5,133	3,834	1,204,917	232,926
September	851,893	192,001	5,073	3,494	856,966	195,495
October	893,550	213,644	3,299	2,789	896,849	216,433
November	520,732	184,064	4,066	3,157	524,798	187,221
December	809,729	264,048	5,490	4,944	815,219	268,992
Jan., 1963	445,983	125,020	4,673	3,755	450,656	128,775
February	645,302	183,443	2,462	1,476	647,764	184,919
March	562,889	174,793	2,031	1,108	564,920	175,901
April	484,055	174,542	2,315	1,362	486,370	175,904
May	890,706	212,271	1,195	605	891,901	212,876
June	1,459,237	267,647	2,020	1,090	1,461,257	268,737
TOTAL	10,836,229	\$2,534,196	43,160	\$31,849	10,879,389	\$2,566,045

Table 11. COMMERCIAL FISH LANDINGS BY ISLAND: JULY, 1962 THROUGH JUNE, 1963

Island	Sea Catch Pounds	Value	Pond Catch Pounds	Value	Total Pounds	Value
Hawaii	1,465,663	\$ 354,176	....	....	1,465,663	\$ 354,176
Maui	1,101,348	159,495	....	....	1,101,348	159,495
Lanai	20,110	6,977	....	....	20,110	6,977
Molokai	8,067	6,220	8,056	4,499	16,123	10,719
Oahu	8,022,091	1,916,475	35,104	27,350	8,057,195	1,943,825
Kauai	218,950	90,853	....	....	218,950	90,853
TOTAL	10,836,229	\$2,534,196	43,160	\$31,849	10,879,389	\$2,566,045

Table 12. COMMERCIAL FISH CATCH BY SPECIES: JULY, 1962 THROUGH JUNE, 1963

Sea Catch by Species					
Species	Pounds	Value	Species	Pounds	Value
Aku (Skipjack)	7,056,654	\$ 934,545	Opelu	436,959	138,671
Ahi (Yellowfin)	449,430	156,237	Palani	3,213	680
Ahipalaha (Albacore)	18,259	4,431	Pualu	16,301	\$ 3,627
Ahi (Bigeye)	1,174,581	573,397	Puhi (eel)	2,400	200
Kawakawa	34,045	5,807	Puhi (white eel)	4,329	692
Swordfishes (Misc.)	324	31	Uhu	2,169	875
Stripe Marlin	275,095	78,806	Ukikiki (Gindai)	1,055	483
Pacific Blue Marlin*	186,613	53,249	Uouoa	607	354
Black Marlin**	8,668	2,746	Uu (Menpachi)	12,118	8,804
Broadbill	21,480	3,491	Weke	67,370	28,213
A'u lepe (Sailfish)	5,928	885	Malu	2,034	1,202
Mahimahi	129,163	51,382	Saba	3,601	1,029
Ono	27,674	4,872	Crab (Papai-Misc.)	2,867	815
Hapuupuu	25,023	10,647	Crab (Kona)	21,019	12,612
Kahala	96,899	28,210	Crab (Kuahonu)	382	264
Kalekale	18,791	9,737	Crab (Moala)	5	1
Omilu	7,592	4,409	Crab (Samoan)	109	71
Opakapaka	108,593	52,780	Opae (Shrimp)	704	2,335
Uku	65,876	27,395	Ula (Lobster)	7,971	5,377
Ulaula (Ehu)	25,846	19,040	Ulapapapa	59	40
Ulaula Koea (Onaga)	61,379	55,573	Hee (Octopus)	5,455	3,036
Ulua	69,879	30,011	Muhee (True Squid)	11,679	3,479
Weke-ula	15,869	10,063	Opihi (Limpet)	18,800	7,934
Aawa	2,537	439	Honu (Turtle)	47	8
Aholehole	4,530	2,779	Misc.	19,019	7,012
Akule	146,686	106,845	TOTAL	10,836,229	\$2,534,196
Hahalalu	25,887	16,058	Pond Catch by Species		
Amaama (Mullet)	11,242	8,601	Species	Pounds	Value
Awa	8,352	3,086	Ulua	1,621	\$ 1,307
Aweoweo	2,440	1,030	Aholehole	2,422	1,244
Humuhumu (Hage)	928	274	Amaama (Mullet)	22,720	21,227
Kaku (Barracuda)	2,130	627	Awa	4,527	2,392
Kala	17,167	2,062	Awaawa	2,077	668
Kakelea	7,021	2,933	Kaku	787	577
Kumu	10,796	11,304	Moi	218	217
Laenihi (Nabeta)	514	320	Oio	298	135
Lehi	2,678	858	Crab (Papai-Misc.)	635	214
Maomao (Mamo)	2,869	1,059	Crab (Kuahonu)	914	679
Manini	6,572	3,219	Crab (Moala)	34	12
Moana	12,264	7,208	Crab (Samoan)	320	239
Moi	14,594	8,990	Clam (Olepe)	6,188	2,814
Moelua	6,467	3,534	Misc.	399	124
Nenua	1,961	888	TOTAL	43,160	\$ 31,849
Nohu (Hogo)	1,543	865	GRAND TOTAL	10,879,389	\$2,566,045
Oio	23,118	5,659			

**Makaira ampla* (Called black marlin by Hawaiian Fish and Game Division prior to July 1962)

***Istiompax marlina* (Called silver marlin by Hawaiian Fish and Game Division prior to July 1962)

Table 13. FISHING AND HUNTING VIOLATIONS: 1962-1963

Kind of Violation	Number
FISHING, HUNTING, FIREARMS & MISCELLANEOUS VIOLATIONS	147
FISHING VIOLATIONS	73
Fishing for freshwater game fish without license	2
Fishing with illegal mesh nets	17
Fishing with and possession of small mesh thrownets	5
Fishing for commercial purpose without license	1
Fishing for and possession of sea mullet during the closed season	15
Taking oysters while in closed season	15
Possession of Kuahonu crabs with eggs	1
Fishing for and possession of lobsters during the closed season, while with eggs, under the legal weight, and with illegal gear (spear)	16
Possession of dynamite on a beach area	1
HUNTING VIOLATIONS	65
Hunting without license	21
Hunting game birds during the closed season	8
Hunting in a public shooting ground without permit	1
Hunting on private property without permit	8
Failure to display hunting license while hunting	3
Hunting in forest reserve without permit	7
Unlawful carriage of firearms on public shooting grounds	3
Hunting game mammals in public shooting grounds prior to an open season	3
Hunting game birds on unauthorized hunting days	5
Entering and remaining upon a public shooting ground without permit	2
Hunting game birds in public shooting ground with illegal hunting arm	1
Removal of live game mammal from public shooting ground	1
Hunting with rifle in the Archery Area of a public shooting ground	2
FIREARMS & MISCELLANEOUS VIOLATIONS	9
Unlawful carriage and discharging of firearms on public highway	8
Landing on a bird sanctuary island without permit	1

Table 14. ARRESTS AND DISPOSITIONS: 1962-1963

Subject	The State	Hawaii County	Honolulu County	Kauai County	Maui County
Arrests	132	34	68	8	22
Number of arrests	147	38	70	15	24
Bail forfeitures	34	10	14	..	10
Released to juvenile authorities	18	2	3	10	3
Released to Military authorities	9	2	7	..	..
Nolle Prosequi	4	1	..	..	3*
Cases pending	8	..	7	..	1
Convictions	83	23	38	5	18*
Fines	27	9	4	5	9*
Suspended fines	30	2	24	..	4*
Split fines (fines and suspended fines)	25	12	8	..	5
Suspended sentence	3	..	3	..	..
Suspended jail sentence	11	8	3	..	..

*Eleven (11) pending cases from the previous fiscal year (1961-1962) were disposed of during this fiscal year in Maui County. Disposition of these cases resulted in three nolle prosequi and eight convictions. Five of the convictions resulted in fines and three resulted in suspended fines.

Table 15. INCOME FROM ARRESTS: 1962-1963

(Revenues credited to county in which arrest was made)

County	Fines (dollars)	Bail Forfeitures (dollars)	Suspended Fines (dollars)
The State	1,345	810	1,775
Hawaii County	640	195	565
Honolulu County	245	450	970
Maui County	400	165	240
Kauai County	60	..	..

DIVISION OF FORESTRY

Table 1. FOREST INCOME

(A) Fiscal Year 1962-63

Source	Kauai	Oahu	Molokai	Maui	Hawaii	Total
Nursery Sales ..	\$1,897.80	\$ 396.15	....	\$2,024.50	\$ 5,247.97	\$ 9,566.42
Sale of Products.	205.05	3,038.75	....	740.10	8,447.56	12,431.46
Property Sales ..	....	....	....	....	....	....
Rentals .....	....	....	....	4.00	1,792.00	1,796.00
Sale of Services..	....	....	....	....	153.20	153.20
Total: Non-Federal	\$2,102.85	\$3,434.90	....	\$2,768.60	\$15,640.73	\$23,947.08

Federal Cooperation:

Clarke-McNary, Sec. 2, Forest Fire	\$23,443.97
Clarke-McNary, Section 4, Forest Planting	4,500.00
Title IV Program, Reforestation	36,944.79
Agricultural Conservation Program	1,500.00
Total: Federal Sources	\$66,388.76
GRAND TOTAL	\$90,335.84

(B) Fiscal Year 1963-64

Source	Kauai	Oahu	Molokai	Maui	Hawaii	Total
Nursery Sales	\$1,361.80	\$ 870.15	\$11.70	\$1,121.44	\$4,457.16	\$ 7,822.25
Sale of Products:						
Tree Fern Stumpage .....	....	....	....	....	5,155.11	5,155.11
Other	114.00	2,551.00	....	575.00	434.39	3,674.39
Rentals:						
Cabins and Barracks .....	....	....	....	....	1,661.80	1,661.80
Total: Non-Federal	\$1,475.80	\$3,421.15	\$11.70	\$1,696.44	\$11,708.46	\$18,313.55

Federal Cooperation:

Clarke-McNary, Sec. 2, Forest Fire	\$21,663.96
Clarke-McNary, Sec. 4, Forest Planting	5,775.00
Title IV Program, Reforestation	20,000.00
Agricultural Conservation Program	1,998.40
Cooperative Forest Management	7,500.00
Total: Federal Sources	\$56,937.36
GRAND TOTAL	\$75,250.91

Table 2. REFORESTATION PROGRAM IN FOREST RESERVES*(Clearing, Planting and Replanting)***(A) Fiscal Year 1962-63**

Island and Type of Organization	Clearing Area	Area	Planting Trees	Area	Replanting Trees
	(Acres)	(Acres)	(No.)	(Acres)	(No.)
Kauai, Div. of Forestry Total	814	961	(No data)		(No data)
Oahu, Div. of Forestry Total	18	85	"		"
Molokai, Div. of Forestry Boys Camp	511 (No data)	383 (No data)	"		"
Total	511	383	"		"
Maui, Div. of Forestry Total	461	552	"		"
Hawaii Div. of Forestry	1,605	1,200	"		"
Kulani Honor Camp	(No data)	(No data)	"		"
Private Contractors	"	"	"		"
Total	1,605	1,200			
Grand Total	3,409	3,181	"		"

Table 2. REFORESTATION PROGRAM IN FOREST RESERVES (Continued)**(B) Fiscal Year 1963-64**

Island and Type of Organization	Clearing Area	Area	Planting Trees	Area	Replanting Trees
	(Acres)	(Acres)	(No.)	(Acres)	(No.)
Kauai, Div. of Forestry Total	(1) 210	(2) 245	224,470	5	2,150
Oahu, Div. of Forestry Total	5	8	1,965	6	2,475
Molokai Div. of Forestry	50	50	26,200	..	..
Boys Camp	140	140	73,445	22	12,641
Total	190	190	99,645	22	12,641
Maui, Div. of Forestry Total .....	....	(3) 464	215,079	564	307,080
Hawaii Div. of Forestry	27	1,151	495,768	423	51,625
Kulani Honor Camp	100	....	....	..	..
Private Contractors	675	....	....	..	..
Total	802	(4) 1,151	495,768	423	51,625
State Div. of Forestry	292	1,918	963,482	998	363,330
Institutional Camps	240	140	73,445	22	12,641
Private Contractors	675	....	....	..	..
Grand Total	1,207	2,058	1,036,927	1,020	375,971

(1) Includes 103 acres clearing by Division tractor, 32 acres hand work, and 75 acres prescribed burn.

(2) Puu Ka Pele, 215 acres; Moloaa 23 acres; Kealia 3 acres; Kalepa 4 acres.

(3) Makawao 430 acres; Piinau 34 acres.

(4) Waiakea-Olaa Forest Working Circle.

Table 3. ACRES PLANTED BY ISLANDS AND BY ORGANIZATIONAL UNITS

Fiscal Years 1960 to 1965 Inclusive

Island and Organizational Unit	1960	1961	1962	1963	1964	1965	Total to 7/1/65
Kauai:							
Division of Forestry .....	..	200	100	961	245	179	1,685
Total — Kauai .....	..	200	100	961	245	179	1,685
Oahu:							
Division of Forestry	3	177	30	85*	8	27	330
Total — Oahu	3	177	30	85	8	27	330
Molokai:							
Division of Forestry .....	..	175	198	148	50	12	583
Boys Camp	67	40	120	235	140	73	675
Total — Molokai	67	215	318	383	190	85	1,258
Maui:							
Division of Forestry .....	..	169	312	552	464	9	1,506
Olinda Honor Camp	24	63	..	..	..	0	87
Total — Maui	24	232	312	552	464	9	1,593
Hawaii:							
Division of Forestry .....	..	303	179	1,156	1,151	820	3,609
Kulani Honor amp	160	336	205	44	..	198	943
Total — Hawaii	160	639	384	1,200	1,151	1,018	4,552
State:							
Division of Forestry	3	1,024	819	2,902	1,918	1,047	7,713
Institution Camps	251	439	325	279	140	271	1,705
GRAND TOTAL — State	254	1,463	1,144	3,181	2,058	1,318	9,418

* Includes 56 acres planted by Army on burn at Puu Kapu, Kawaihoa Forest Reserve
PLANTING OBJECTIVES (LEGISLATURE)

Area	1,400	2,800	2,800	1,400	1,400	(8,400)
Appropriation	\$172,000	\$243,000	\$244,000	\$123,000	\$123,000	(\$782,000)

Table 4. NUMBER OF TREES PLANTED BY SPECIES AND ISLAND

(A) Fiscal Year 1962-63 (No data)

(B) Fiscal Year 1963-64

Species	Kauai ⁽¹⁾	Oahu	Molokai	Maui ⁽²⁾	Hawaii ⁽³⁾	State
Australian redcedar	672	250	6,100	32,615	322,367	362,004
Tropical ash	772	....	....	162,013	163,275	326,060
Saligna	2,684	570	36,000	17,186	....	56,440
Loblolly	98,200	....	....	....	....	98,200
Slash pine	112,000	....	46,120	....	....	158,120
Norfolk Island pine .....	....	480	....	2,255	....	2,735
Monkeypod	1,524	625	....	....	....	2,149
Miscellaneous ⁽⁴⁾	8,618	40	11,425	1,010	10,126	31,219
Total	224,470	1,965	99,645	215,079	495,768	1,036,927

⁽¹⁾ Puu Ka Pele area, 215 acres; Moloaa 23 acres; Kealia 3 acres; Kalepa 4 acres.

⁽²⁾ Piinau 34 acres; Makawao 430 acres.

⁽³⁾ Waiakea-Olaa Forest Working Circle.

⁽⁴⁾ Includes Australian kauri, East Indian kauri, blackbutt, mahoe, prickly narra, smooth narra, Queensland maple, Spanish-cedar, tallowood, ammamnit, sea grape, Hawaiian kou, dwarf bluegum, Nepal alder, river redgum, Karri eucalyptus, grey ironbark, tulip poplar, mango, and prima vera.

Many of the minor species listed were set out for field trials of adaptability. For instance, on Kauai 22 such test plots were installed.

Table 5. NURSERY DISTRIBUTION

(A) Fiscal Year 1962-63

	KAUAI			OAHU			MAUI			HAWAII			TOTAL	GRAND TOTAL
	Timber and Others	Wind- break	Timber and Others	Timber and Others	Wind- break	Timber and Others	Timber and Others	Wind- break	Timber and Others	Timber and Others	Wind- break	Timber and Others	Wind- break	
TIMBER TREES														
To Federal Lands .....	..	..	..	..	..	..	..	..	..	..	..	..	..	95
State Forest Reserve ...	46,235	..	..	38,037	..	173,260	..	..	382,686	..	..	1,010,218	..	1,010,218
Other State Lands .....	..	..	..	..	..	..	..	..	..	2,705	..	..	2,705	2,705
Towns, Cities and Public Schools	250	561	..	..	200	..	..	..	..	591	250	1,352	1,602	1,602
Persons, Assoc., & Private Schools	363	6,269	..	..	3,415	..	1,984	8,305	18,458	8,668	30,126	38,794	..	38,794
Forest Reserves— Not State owned .....	..	..	..	..	..	..	..	..	42,926	135	42,926	135	43,061	43,061
Plantations, Ranches, Water & Power Co.— not in Forest Reserve ..	539	23,450	900	82	..	..	..	26,320	64,456	27,759	87,988	115,747	..	115,747
Total Timber and Windbreak Trees	417,387	30,280	39,032	3,697	173,260	1,984	460,237	86,345	1,089,916	122,306	1,212,222	..	..	1,212,222
ORNAMENTAL TREES														
To State Parks	1,283	..	..	..	..	..	..	219	..	1,502	..	1,502	..	1,502
General Public	17,018	..	2,444	..	2,552	..	15,984	..	37,998	..	..	37,998	..	37,998
Total Ornamental Trees	18,301	..	2,444	..	2,552	..	16,203	..	39,500	..	..	39,500	..	39,500
FRUIT TREES														
Grafts	57	..	43	..	..	..	..	848	..	948	..	948	..	948
Seedlings & Cuttings	1,238	..	32	..	3,492	..	3,785	..	8,547	..	..	8,547	..	8,547
Total Fruit Trees	1,295	..	75	..	3,492	..	4,633	..	9,495	..	..	9,495	..	9,495
Total All Trees	467,263	..	45,248	181,288	567,418	1,261,217	1,261,217	1,261,217	1,261,217	1,261,217	1,261,217	1,261,217	1,261,217	1,261,217

Table 6. FOREST FIRES

(A) Fiscal Year 1962-63

Geographic Area	Date	Acres burned
The State (16 fires) .....	.....	7,619.0
Oahu (9 fires) .....	.....	1,309.0
East Range, Kawaihoa Forest Reserve	7-25-62	2.0
Kawaihoa Forest Reserve	8- 3-62	10.0
K-1 Training Area, Kawaihoa Forest Reserve	8- 8-62	1.0
Pupukea, Kawaihoa Forest Reserve	8-11-62	2.0
Kaukonahua, Kawaihoa Forest Reserve	8-22-62	6.0
Waiahole Forest Reserve	8-24-62	15.0
Puu Kapu, Kawaihoa Forest Reserve	11-22-62	1,200.0
Kawaihoa Forest Reserve	1- 5-63	3.0
Waialae Nui Ridge, Honolulu Watershed	6-16-63	70.0
Maui (2 fires) .....	.....	10.0
Kailiili, Koolau Forest Reserve	9- 8-62	5.0
Olinda Houselot, Waihou Forest Reserve	9- 4-62	5.0
Hawaii (4 fires) .....	.....	.....
Kiolakaa, Kau District	12-10-62	400.0
Keauhou 2, North Kona District	1- 6-63	800.0
Keaau, Puna District	2- 3-63	4,500.0
Keonepoko 2, Puna District	4- 2-63	400.0
Kauai (1 fire) .....	.....	200.0
Polihale, Puu Ka Pele Forest Reserve	11-23-62	200.0

Table 6. FOREST FIRES (Continued)

(B) Fiscal Year 1963-64

Geographic Area	Date	Acres burned
Oahu (3 fires and 1 false alarm)		
Ewa Forest Reserve	8- 3-63	5.0
Kawaihoa Training Area	8-15-63	5.0
*Ewa Forest Reserve, Schofield Waikane Trail	4- 7-64	False Alarm
Ewa Forest Reserve, Aiea	6- 6-64	1.0
Maui (2 fires)		11.0
Pulehunui	7- 9-64	1.0
Opana Peahi area	10-13-64	2.0
Hawaii (None)		3.0
Kauai (None)		
Molokai (None)		
Total All Islands		14.0

Table 7. ROADS, TRAILS AND FENCES

(A) Fiscal Year 1962-63 (no data)

(B) Fiscal Year 1963-64

Island	Construction (In feet)			Maintenance (in feet)		
	Roads	Trails	Fences	Roads	Trails	Fences
Kauai	13,728	10,560	.....	95,040	26,400	500
Oahu .....	.....	.....	.....	23,760	89,760	43,897
Molokai .....	.....	10,560	.....	310,200	15,840	24,596
Maui	29,568	.....	.....	23,760	3,960	3,000
Hawaii	87,680	.....	.....	57,552	6,600	14,703.1
F.Y.—1963-64 Total						
Feet	130,680	21,120	.....	510,312	142,560	86,961.1
Miles	24.75	4.0	.....	96.65	27.0	16.42

Table 11. RESEARCH PUBLICATION

(A) Fiscal Year 1963

- Anderson, H. W. Hopkins, W. S., and Nelson, R. E.
1962 A program for watershed management research in Hawaii wildlands. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Tech. Paper 72.
- Baechler, R. H., and Gjovik, L. R.
1962 The chemical analyses of posts of Hawaiian species treated in tanks by double diffusion. (Unpublished report on file at Forest Prod. Lab., U. S. Forest Serv., Madison, Wis.)
- Bryan, L. W., and Walker, C. M.
1962 A provisional check list of some common native and introduced forest plants in Hawaii. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Misc. Paper 69.
- Honda, N., and Klingensmith, J. D.
1962 & 1963. Hawaii forest type map. Island of Hawaii. Blue line prints showing land use, forest type, density and size class of timber stand. Twenty-two quadrangle units (15 minute). Scale 1:62,500. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. in cooperation with Div. of Forestry, Hawaii Dept. of Land and Natural Resources.
- LeBarron, R. K.
1962 Eucalypts in Hawaii: a survey of practices and research programs. U. S. Forest Serv. Pacific SW. Forest & Range Expt. Sta. Misc. Paper 64.
- Nelson, R. E.
1962 Forest products harvested in Hawaii: 1958 and 1960. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Misc. Paper 71.
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1962 Commercial uses and volume of Hawaiian tree fern. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Tech. Paper 73.
- Pickford, G. D.
1962 Opportunities for timber production in Hawaii. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Misc. Paper 67.
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- Skolmen, R. G., and Smith, H. H.
1962 Drying of silk-oak in Hawaii. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Tech. Paper 65.
- Strong, C. C., and Skolmen, R. G.
1962 Pacific floats logs to Hawaiian shores from Pacific Northwest and British Columbia. Western Conservation Journal, Vol. XIX, Nos. 4 & 5, pp. 24-25 and 32-33, July-October 1962.
- U. S. Forest Service
1963 Forest Research in Hawaii, 1957-1962. Pacific SW. Forest and Range Expt. Sta. (A progress report given limited distribution.)
- Whitsell, C. D.
1962 Forestry and research activities on the Mauna Kea Soil and Water Conservation District, 1962. Mauna Kea Soil Conserv. Dist. Seventh Annual Report, pp. 31-32.

(B) Fiscal Year 1964

- Frazier, G. D.
1964 Progress Report—Forest products market research program in Hawaii. Jan. 20, 1964. (Unpublished report on file at Pacific SW. Forest and Range Expt. Sta., Berkeley, Calif.)
- Frazier, G. D.
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- Gerhards, C. C.
1963 A limited evaluation of a few strength properties for *Acacia koa*, *Metrosideros collina*, and *Eucalyptus robusta* grown in Hawaii (Unpub. report on file at Forest Prod. Lab., U. S. Forest Serv., Madison, Wis.)
- Honda, N., Cheatham, N.H., and Klingensmith, J.D.
1964 Hawaii forest type map. Island of Maui. Blue line prints showing land use, forest type, density and size class of timber stand. Four sheets (15-minute). Scale 1:62,500. U. S. Forest Serv. Pacific SW. Forest & Range Expt. Sta. in cooperation with Div. of Forestry, Hawaii Dept. of Land and Natural Resources.
- Honda, N., and Klingensmith, J. D.
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- Richmond, G. B.
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1963 Robusta eucalyptus wood: its properties and uses. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Res. Paper PSW-9.
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- U. S. Forest Service
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- Whitesell, C. D.
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- Yamamoto, Teruo
1963 Soil moisture constants and physical properties of selected soils in Hawaii. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Res. Paper PSW-2
- Yamamoto, Teruo, and Duffy, P. D.
1963 Water storage capacities of soil under four different land uses in Hawaii. U. S. Forest Serv. Pacific SW. Forest and Range Expt. Sta. Res. Note PSW-5

DIVISION OF STATE PARKS

**Table 1. STATE PARK AND HISTORIC SITE AREAS AND VISITORS, BY ISLAND AND PARK:
1952 TO 1964**

Island and state park or historic site	Year estab.	Area in acres, June 30			Number of visitors ⁽¹⁾		
		1952	1963	1964	1953	1963	1964
All parks .....	..	5,422.4	6,419.7		75,610	666,237	1,196,409
Hawaii .....	..	13.2	175.3		35,610	178,753	311,232
Akaka Falls	1952	..	65.4		23,760	21,112	34,320
Lava Tree	1956	..	17.1		..	29,263	37,216
MacKenzie	1955	..	13.1		3,220	19,712	22,736
Manuka	1952	13.2	13.2		8,630	27,074	40,376
Wailoa River	1954	..	66.5		..	69,967	161,008
Mauna Kea	1962	..	(5)		..	11,625	15,576
Maui .....	..	9.1	27.2		5,000	53,780	98,572
Hale Kee & Pihana ⁽²⁾ ..	1962	..	10.2	(No change from 1963)	..	2,593	1,904
Iao Valley	1961	..	3.9		..	36,145	75,868
Kaunahina	1952	7.6	7.6		3,500	6,606	8,640
Keanae Valley Lookout	1951	1.5	1.5		1,500	3,392	5,164
Poli Poli Spring	1957	..	2.0		..	281	(6)
Puaa Kaa	1954	..	2.0		..	4,763	6,996
Molokai: Palaau	1955	..	233.7		..	3,998	3,188
Oahu .....	..	..	167.5		..	89,300	253,372
Diamond Head ⁽³⁾	1962	..	145.3		..	..	..
Keaiwa Heiau	1955	..	7.2		..	42,563	151,080
Leahi (Ft. Ruger)	1957	..	3.2		..	..	..
Puu o Mahuka ⁽²⁾	1962	..	4.0		..	..	..
Puu Ualakaa	1957	..	6.4		..	46,737	102,292
Ulu Po Heiau ⁽²⁾	1954	..	1.4		..	..	..
Kauai .....	..	5,400.0	5,816.0		35,000	340,406	530,045
Kokee	1952	4,640.0	4,640.0		..	..	(117,328)
Waimea Canyon	1952	760.0	760.0		35,000	129,926	(93,632)
Wailua River ⁽⁴⁾	1956	..	416.0		..	210,480	317,812
Na Pali Coast	1962	..	(5)		..	..	1,273

(1) For years ending June 30. Not available before 1953.

(2) Historic Site.

(3) State Monument. Includes Na Laau Arboretum (1958; 9.5 acres).

(4) Includes Wailua River Reserve (1956; 297.4 acres), Kaunualii (1956; 4.3 acres), Fern Grotto (1956: 4.8 acres), Boat Basin (1962: 11.4 acres), Poliahu (1962: 59.0 acres), and Lydgate (1962: 39.2 acres).

(5) Acquired jurisdiction—no definite boundary lines yet established.

(6) Administration of Poli Poli Spring transferred to Division of Forestry, September 1, 1963.

Table 2. STATE PARK AND HISTORIC SITE AREA, VISITS AND EXPENDITURES, 1952-1964

	Number of Parks, June 30	Area, June 30, (acres)	Est. no. of Visits ⁽¹⁾	Expenditures (dollars) ⁽¹⁾		
				Total	Operating	Other ⁽²⁾
1952	5	5,422	(NA)	12,458	12,458	..
1953	7	5,500	76,000	19,469	19,469	..
1954	9	5,741	79,000	20,109	12,575	7,534
1955	14	5,831	148,000	28,914	13,102	15,812
1956	15	5,848	154,000	25,473	13,432	12,041
1957	16	6,148	164,000	16,134	14,134	2,000
1958	18	6,176	239,000	24,695	21,712	2,983
1959	18	6,176	243,000	49,445	37,549	11,896
1960	18	6,176	267,000	542,905	80,558	462,347
1961	18	6,176	297,000	482,150	119,676	362,474
1962	21	6,420	489,000	387,918	174,764	213,154
1963	23	6,420 ⁽³⁾	666,000	492,666	202,184	289,482
1964	22	6,420 ⁽³⁾	1,196,000	301,489	195,506	105,983

NA Not available.

(1) Year ended June 30.

(2) Land acquisition and capital improvements.

(3) Two parks for which boundaries are not yet established are not included.

DIVISION OF LAND MANAGEMENT

Table 1. GEOGRAPHIC STATISTICS FOR THE HAWAIIAN ARCHIPELAGO AND STATE OF HAWAII

Island or group	Number of islands ⁽¹⁾	Area (square miles) ⁽¹⁾		Tidal shoreline (miles) ⁽²⁾	Highest peak (feet) ⁽²⁾
		Land	Water		
The Archipelago	124	6,417	9	(NA)	13,796
State of Hawaii	122	6,415	9	1,052	13,796
Midway Islands	2	2	..	(NA)	12
Hawaii Island	9	4,021	..	313	13,796
Maui Island	19	728	..	149	10,023
Kahoolawe Island	2	45	..	36	1,477
Lanai Island	11	141	..	52	3,370
Molokai Island	14	259	..	106	4,970
Oahu Island	35	595	7	209	4,040
Kauai Island	3	551	2	110	5,170
Niihau Island ⁽³⁾	4	72	..	52	1,281
Leeward Islands	27	5	..	(NA)	910
In State of Hawaii ⁽⁴⁾	25	3	..	25	910
Midway Islands	2	2	..	(NA)	12

(NA) Not available.

(1) Median land area of the 124 islands is 3 acres. Data are from the Department of Land and Natural Resources. Department of Land and Natural Resources.

Land Area of the Hawaiian Archipelago (Memorandum B-5).

(2) From Department of Planning and Research, *Geographic Statistics for Hawaii* (Research Report 15, January 15, 1962).

(3) Includes Lehua and Kaula Islands.

(4) Includes Nihoa Island, Necker Island, French Frigate Shoal, Gardner Pinnacles, Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Reef, and Kure Island.

Table 2. LAND OWNERSHIP OR TENURE, FOR HAWAII: FISCAL YEAR 1963-1964

Ownership or Tenure	Area in Acres (Estimated)		
Total		4,105,600	100
FEDERAL ⁽¹⁾		425,225	10.4
Armed Forces	144,103		
Owned in Fee	34,922		
Ceded Lands	109,181		
National Parks	246,748		
Owned in Fee	196,411		
Ceded Lands	50,337		
Other Federal Agencies	34,374		
STATE ⁽²⁾		1,589,485	38.7
Haw'n Home Lands	100,485		
Public Lands and Other Agencies	1,489,000		
PRIVATE ⁽³⁾		2,090,890	50.9
5,000 acres or more ⁽⁴⁾	1,811,347		
Less than 5,000 acres ⁽³⁾	279,543		

(1) Includes all lands owned by the U. S. Government, plus ceded lands held by the Department of Defense or National Park Service under executive order of the president or governor. From Hawaii Department of Land and Natural Resources *Statistics on Federal Land Tenure in Hawaii, 1960-1962*, Memorandum B-4.

(2) Excludes lands ceded to the U.S. Government under executive order of the president or governor and public rights of way.

(3) Includes county lands acquired by purchase or gift from private owners, and all public rights of way. Computed as residual.

(4) From Hawaii Department of Planning and Research, *Statistical Abstract of Hawaii, 1962*, p. 43.

Table 3. STATE-OWNED LAND — BY COUNTIES — 1961 & 1964

Political Unit	Total Land Area (Acres)	State-Owned Land (Acres)		Percent State-Owned
		1961	1964	
STATE	4,105, 600	1,524,726	1,589,485	38.7
County				
Honolulu	382,720	55,566	55,566	14.5
Maui and Kalawao	750,720	255,818	255,818	34.1
Hawaii	2,573,440	1,061,392	1,126,151	43.7
Kauai	398,720	151,950	151,950	38.1

Table 4. OWNERSHIP OF AREA IN ACRES WITHIN CONSERVATION DISTRICT BY COUNTY, AUGUST 23, 1964

Ownership	State Total	C&C of Honolulu	Maui County	Hawaii County	Kauai County
All Agencies	1,841,405	149,037	304,413	1,217,689	170,266
Private	613,871	97,215	148,932	303,936	63,788
State	915,466	34,909	111,250	671,180	98,127
Federal	262,433	9,305	37,288	213,585	2,255
Hawaiian Homes	42,841	836	6,936	28,986	6,083
Counties	6,794	6,772	7	2	13

Table 5. OWNERSHIP OF AREA IN ACRES WITHIN "GENERAL USE" SUBZONE BY COUNTY, AUGUST 23, 1964.

Ownership	State Total	C&C of Honolulu	Maui County	Hawaii County	Kauai County
All Agencies	1,722,993	133,600	256,150	1,166,744	166,499
Private	589,607	94,378	133,599	300,354	61,276
State	835,558	27,507	78,320	632,859	96,873
Federal	259,250	6,122	37,288	213,585	2,254
Hawaiian Homes	33,799	836	6,936	19,944	6,083
Counties	4,779	4,757	7	2	13

Table 6. OWNERSHIP OF AREA IN ACRES WITHIN "RESTRICTED WATERSHED" SUBZONE BY COUNTY, AUGUST 23, 1964

Ownership	State Total	C&C of Honolulu	Maui County	Hawaii County	Kauai County
All Agencies	118,412	15,437	48,263	50,945	3,767
Private	24,264	2,836	15,334	3,582	2,512
State	79,908	7,402	32,929	38,322	1,255
Federal	3,183	3,183	..	..	..
Haw'n Homes	9,041	..	..	9,041	..
Counties	2,016	2,016	..	..	..

SPECIAL LAND AND DEVELOPMENT FUND
Land Management Program

	Actual 1963-1964
Balance at the beginning:.....	4,299,850
Receipts:	
Interest on deferred payments.....	36,587
Sales of Public Lands.....	934,695
Reimbursable Expenditures.....	5,088
Reimbursement of Improvements to public lands.....	27,876
Appraisal Fees Revolving Fund.....	11,080
Total Receipts.....	5,315,276
Expenditures:	
Land and Interest in Land.....	48
Structures and Permanent Improvements to Land.....	961,964
Transfers:	
Department of Social Services.....	..
Bond Fund Repayments.....	36,793
Total Expenditures.....	998,805
Balance at end.....	4,316,471

PUBLIC TRUST FUND CEDED LAND PROCEEDS
Land Management Program

	Actual 1963-1964
Receipts:	
Rentals, Leased Public Lands.....	1,348,203
Rentals, Unleased Public Lands.....	348,502
Sale of Wood, Rock and Sand.....	50,514
License, Use of Government Water.....	161,104
License, Use of Government Land for Specific Purposes.....	5,430
Receipts Transferred to Hawaiian Home Lands.....	428,633*
Total Receipts.....	2,342,386
Expenditures:	
Transfers to Hawaiian Home Lands.....	428,633
Transfers to General Fund.....	1,913,753
Total Expenditures.....	2,342,386
Transfers to Hawaiian Home Lands:	
Loan Fund.....117,289*	
Administration Fund.....226,520	
Development Fund.....84,824	
	428,633

30% of sugar leases and water licenses.
H.H. Lands rentals as appropriated by Legislature.
H.H. Lands rentals over Legislative appropriations.
*Maximum of \$5,000,000 transferred already.
No other transfers to be made without legislative approval.

GENERAL FUND REVENUES
Land Management Program

	Fee Schedule	Actual 1963-1964
Fees, Copies of Public Documents.....	\$1.00 page	330
Fees, Issuance of Land Patents, Etc.....	20.00	8,746
Fees, Consents to Transfers, Etc.....		1,240
Fees, Surveying of Public Lands.....		6,505
Fees, Appraisals.....		150
Sale of Publications.....		70
Sale of Improvements on Expired Leases.....	As Appraised	36,990
Sale of Equipment and Other Property.....		875
Refunds of Prior Year Expenditures.....		250
Total Receipts.....		55,156

FIRST LAND DISTRICT
Island of Hawaii

GENERAL LEASES
SUMMARY, FIRST LAND DISTRICT

	Use	Area (Acres)	Annual Rental	Number Leases
agr	Agriculture, general	248.195	\$ 1,009.00	13
bus	Business	18.583	44,898.00	22
cane	Sugar Cane	12,763.340	130,169.34	33
cty	County	23.096	.....	2
ele	Eleemosynary	1.000	780.00	1
fed	Federal Government	23.896	.....	2
fpd	Fishpond	50,867	484.14	1
ind	Industrial	617.945	55,053.00	47
past	Pasture	261,510.489	577,077.99	91
res	Residential	12.968	5,189.50	28
r/w	Rights of way	80.508	464.12	12
waste	Waste lands	750.499	63.13	(a)
wtr	Water licenses reservoirs, etc.	24.610	3,001.00	3
TOTALS		280,125.996	\$818,189.22	255

(a) Included in Sugar cane leases

SECOND LAND DISTRICT
Island of Maui

GENERAL LEASES
SUMMARY, SECOND LAND DISTRICT

	Use	Area (Acres)	Annual Rental	Number Leases
agr	Agriculture, general	443.632	\$ 2,656.44	17
bus	Business	3.910	346.00	2
cane	Sugar Cane	1,137.080	21,569.21	2
ele	Eleemosynary	48.140	226.00	4
fed	Federal Government	962.725	.....	1
fpd	Industrial	6.000	137.00	1
past	Pasture	30,794.536	44,224.40	45
res	Residential	10.348	125.00	2
r/w	Rights of way	5.187	125.00	3
wtr	Water licenses reservoirs, etc.	3,422.663	70,317.24	5
TOTALS		36,834.221	\$139,726.29	82

THIRD LAND DISTRICT
Island of Oahu

GENERAL LEASES
SUMMARY, THIRD LAND DISTRICT

	Use	Area (Acres)	Annual Rental	Number Leases
agr	Agriculture, general	444.341	\$ 26,124.85	51
bus	Business	6.877	11,587.00	9
ele	Eleemosynary	122.234	12,385.00	5
fed	Federal Government .....	.548	1.00	1
ind	Industrial	108.728	31,176.00	8
past	Pasture	2,335.349	6,511.00	1
pine	Pineapple	578.265	17,119.45	5
res	Residential	1.297	239.94	4
r/w	Rights of way	80.547	4,722.20	28
wtr	Water licenses reservoirs, etc.	4,620.130	31,012.00	3
TOTALS		8,298.316	\$140,878.44	115

FOURTH LAND DISTRICT
Island of Kauai

SUMMARY, FOURTH LAND DISTRICT
GENERAL LEASES

Use		Area (Acres)	Annual Rental	Number Leases
agr	Agriculture, general	2,082.460	\$ 43,493.25	28
bus	Business	12.900	16,115.60	12
cane	Sugar Cane	14,923.500	290,509.64	5
ele	Eleemosynary	1.840	240.00	1
ind	Industrial	7.600	6,300.00	3
past	Pasture	9,924.400	52,302.82	33
pine	Pineapple	86.760	2,349.63	2
rec	Recreational	18.650	1,680.00	2
res	Residential	1,560	586.00	5
r/w	Rights of way	50,520	3,933.50	8
waste	Waste lands	16,475.925	6,167.27	(a)
wtr	Water licenses reservoirs, etc.	125.000	107,400.00	3
TOTALS		43,711.115	\$531,077.71	102

(a) Included in Sugar cane leases

EXISTING GENERAL LEASES AND LICENSES
DETAILED CLASSIFICATION SUMMARY, TOTAL ALL DISTRICTS

Use		Area (Acres)	Annual Rental	Number Leases
agr	Agriculture, general	3,218.628	\$ 73,283.54	94
bus	Business	42.270	72,946.60	45
cane	Sugar cane	28,823.920	442,248.19	40
cty	County	23,096	....	2
ele	Eleemosynary	173.214	13,631.00	11
fed	Federal Government	987.169	1.00	4
fpd	Fishpond	56.867	621.14	2
ind	Industrial	734.273	92,529.00	55
past	Pasture	304,564.779	680,116.21	177
pine	Pineapple	665.025	19,469.08	3
rec	Recreational	18.650	1,680.00	2
res	Residential	26.173	6,140.44	39
r/w	Rights of way	216.762	9,244.82	51
waste	Waste land	17,226.424	6,230.40	(a)
wtr	Water licenses, reservoirs, etc.	8,192.403	211,730.24	11
TOTALS		364,969.648	\$1,629,871.66	536

(a) Included in sugar cane leases

Table 2. WAIMEA IRRIGATION SYSTEM — MONTHLY BILLINGS

		Water Sold (Gallons)	Acreage Served	Service Charges	Additional Billings	Water Charges	Total Charges	Rainfall (Inches)
1962	July	6,501,740	57.004	\$ 128.26	....	\$ 449.81	\$ 578.07	....
	August	8,456,800	57.507	129.39	....	573.56	702.95	0.30
	September	9,347,870	64.000	144.00	....	635.65	779.65	0.08
	October	8,224,220	66.000	148.50	....	575.76	724.26	0.42
	November	7,101,000	67.507	151.89	....	568.96	720.85	0.29
	December	3,642,740	68.569	154.28	....	264.14	418.42	3.85
1963	January	2,296,930	70.000	157.50	....	166.68	324.18	4.81
	February	3,895,650	74.000	166.50	....	282.06	448.56	1.37
	March	1,577,760	77.502	174.38	....	118.33	292.71	3.85
	April	2,385,030	86.502	194.63	....	177.13	371.76	2.00
	May	8,827,660	92.000	207.00	....	611.94	818.94	0.84
	June	11,252,110	95.000	213.75	....	787.55	1,001.30	0.11
	Total	73,509,510		1,970.08	....	5,211.57	7,181.65	
	July	10,791,990	101.000	227.25	....	733.53	960.78	1.01
	August	10,425,570	108.000	243.00	....	716.42	959.42	0.24
	September	9,227,060	110.000	247.50	....	614.19	861.69	1.10
	October	8,127,870	121.000	272.25	....	570.04	842.29	0.58
	November	9,086,680	124.000	279.00	....	637.15	916.15	1.21
	December	7,477,560	130.000	292.50	....	530.63	823.13	0.12
1964	January	8,704,270	131.000	294.75	....	611.04	905.79	1.04
	February	8,516,930	134.000	301.50	....	602.91	904.41	2.42
	March	4,149,630	135.000	303.75	....	300.61	604.36	3.20
	April	8,360,200	137.995	310.49	....	596.45	906.94	0.85
	May	10,652,940	140.000	315.00	....	746.68	1,061.68	1.10
	June	11,270,590	139.555	314.00	....	784.46	1,098.46	0.16
	Total	106,791,290		3,400.99	....	7,444.11	10,845.10	

DIVISION OF WATER AND LAND DEVELOPMENT

Table 1. WAIMANALO IRRIGATION SYSTEM — MONTHLY BILLINGS

		Water Sold (Gallons)	Acreage Served	Service Charges	Additional Billings	Water Charges	Total Charges	Rainfall (Inches)
1962	July	18,602,605	768.762	\$ 1,921.99	\$ 6.62	\$ 1,488.19	\$ 3,416.80	1.32
	August	20,141,952	768.762	1,921.99	6.62	1,611.36	3,539.97	0.90
	September	15,807,692	768.762	1,921.99	6.62	1,264.59	3,193.20	1.30
	October	11,184,760	768.762	1,921.99	6.62	894.78	2,823.39	2.43
	November	12,653,105	768.762	1,921.99	6.62	1,012.23	2,940.84	0.63
	December	2,741,366	768.762	1,921.99	6.62	219.30	2,147.91	8.01
1963	January	468,079	768.762	1,921.99	6.62	37.44	1,966.05	19.35
	February	315,898	758.062	1,895.24	6.62	25.27	1,927.13	3.42
	March	345,745	758.062	1,895.24	6.62	27.65	1,929.51	19.43
	April	364,034	751.462	1,890.29	6.62	29.11	1,926.02	20.58
	May	2,459,546	745.842	1,864.69	6.62	196.75	2,068.06	5.24
	June	10,435,709	744.042	1,865.44	3.62	834.84	2,703.90	1.30
	Total	95,520,491		22,864.83	76.44	7,641.51	30,582.78	
	July	14,010,695	744.042	1,860.19	3.62	1,120.86	2,984.67	2.87
	August	17,837,137	744.042	1,860.19	3.62	1,426.95	3,290.76	0.62
	September	13,971,802	744.042	1,860.19	3.62	1,117.73	2,981.54	2.32
	October	8,095,880	744.042	1,860.19	3.62	1,863.81	3,727.62	2.37
	November	12,196,533	744.042	1,860.19	3.62	975.74	2,839.55	1.12
	December	1,957,156	720.156	1,800.47	3.62	156.54	1,960.63	6.75
1964	January	2,389,031	730.156	1,808.54	3.62	191.13	2,003.29	6.43
	February	8,425,127	730.156	1,825.47	3.62	673.99	2,503.08	1.15
	March	7,604,466	887.805	2,219.63	3.62	608.36	2,831.61	7.18
	April	9,063,256	887.805	2,219.63	3.62	725.03	2,948.28	2.97
	May	14,715,391	887.805	2,219.25	3.62	1,177.24	3,400.11	0.66
	June	20,436,440	887.702	2,206.13	3.62	1,634.93	3,844.68	0.36
	Total	130,702,914		23,600.07	43.44	11,672.31	35,315.82	