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#### *About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

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Special Study Series  
L.S.B. Report No. 3  
November 1960

LAND USE ON THE  
SIX MAJOR ISLANDS OF HAWAII  
1960

Land Study Bureau  
University of Hawaii

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Foreword

The Statistical Situation - People who need statistics on land use are regularly confronted with various sets of figures that appear to be conflicting. These seeming conflicts are inevitable because various agencies, firms, and individuals define the various land uses in a different manner according to individual needs. Some groups compile planted acreages, others harvested acreages; some compile gross acreages, others net acreages; some groups reporting harvested acreages count the same acres more than once; etc. Innumerable efforts to standardize land-use definitions have had limited success because a standardized set of definitions is not satisfactory for everyone.

Most statistics on land use are not easily related to specific location. This situation is a handicap to those who would analyze the need, stability, and propriety of current uses in various areas because ownership, location, and capabilities of the land have important bearings on present and potential use.

Statistical Approach of the Land Study Bureau - To eliminate some of the aforementioned deficiencies and provide more effective statistics, the Land Study Bureau developed a series of land-use maps (scale of approximately one inch per mile) for each major island by combining information from existing maps and reconnaissance field surveys. After the maps were completed, areas in different uses were measured by planimeter. The planimetered totals for all land-use areas, by islands, were generally within one percent of the official acreages recorded by the State Surveyor's Office. Acreage values for each use on each of the six major islands were rounded to the nearest hundred acres, and these rounded island totals were then adjusted to conform to the official island totals rounded to the nearest hundred acres.

The subsequent tabular data are summaries of measurements obtained from the land-use maps. To facilitate land-use analyses the Land Study Bureau has also developed sets of generalized land classification maps and major ownership maps for the same areas at an identical map scale.

The statistics should be interpreted with reference to the subsequent definitions of various land uses. By virtue of the definitions, areas listed must be viewed as "gross" acreages.

These data represent the most up-to-date accurate information for the State as of 1960.

### Definition of Land-Use Categories

Cooperative Game Management Areas - Land ungrazed by domestic animals, which has been set aside for game reserves.

Forage Crops - Areas used for the production of green-harvested crops such as napier grass and alfalfa.

Forest Reserve - Federal, State, City and County, and private lands set aside for forest purposes.

Grazing - Areas not otherwise in crop production which are used for grazing domestic animals during some portion of the year.

Idle - Unused areas; most of which have a high salt concentration. Vegetation predominantly pickle weed (Akulikuli kai).

Lakes - Includes reservoirs, ponds, and lakes.

Livestock - Land used for containing and housing farm animal enterprises such as poultry and swine.

Livestock and Truck Crops - Areas where both livestock enterprises and vegetable production exist.

Military - Land used by the Armed Forces; owned and leased.

Miscellaneous Public Uses - Includes municipal airports, institutional uses, recreational areas, parks, playgrounds, etc.

Noncommercial Agricultural Use - Land cropped largely for family use.

Orchard - Entire acreage devoted to the cultivation of fruit and nut trees, such as macadamia and papaya.

Pineapple - Areas used primarily for pineapple production which include roads, experimental plots, fallow areas, and loading zones.

Rice and Taro - Areas generally used exclusively for growing rice or taro.

Sugar Cane - Land used primarily for the production of sugar cane and includes experimental plots, roads, irrigation lines, and pumping stations.

Timber Trees - Ungrazed tree areas not included in forest reserves.

Truck Crops - Nearly all of the acreage is used for the production of vegetable crops.

Truck Crops and Orchards - Areas where orchards and vegetable crops are grown.

Unused; Steep Slopes - Low-use tracts with slopes generally greater than 40%.

Urban (undifferentiated) - Land used by business, industry, and residential settlements.

Water Crops and Truck Crops - Areas where crops such as taro or lotus are rotated with vegetable crops.

LAND USES ON THE SIX MAJOR ISLANDS OF HAWAII\*  
Expressed in Acres

Land Use	Hawaii	Kauai	Maui	Oahu	Molokai	Lanai	Total
Grazing	1,679,200	62,700	199,300	55,600	101,500	2,000	2,100,300
Orchard	16,800	300	200	1,100	**	**	18,400
Sugar Cane	134,800	58,800	53,700	40,100	0	**	287,400
Timber Trees	53,400	1,800	0	0	300	5,900	61,400
Urban (undifferentiated)	14,800	5,000	9,200	31,100	2,000	500	62,600
Unused, Steep Slopes	25,200	41,200	4,200	43,100	1,200	0	114,900
Truck Crops	4,800	100	5,400	2,300	100	**	12,700
Rice and Taro	200	400	200	800	0	0	1,600
Forest Reserve	446,600	167,900	154,800	112,400	46,300	**	928,000
Military	700	2,900	200	51,700	**	0	55,500
Miscellaneous Public Uses	202,700	1,300	17,600	7,400	400	100	229,500
Pineapple	0	11,700	19,300	35,900	13,500	16,100	96,500
Water and Truck Crops	0	200	0	100	0	0	300
Lakes	0	400	0	1,200	200	0	1,800
Idle	0	100	1,800	300	200	0	2,400
Forage Crops	0	400	0	0	200	0	600
Truck Crops and Orchard	0	0	0	2,900	0	0	2,900
Livestock and Truck Crops	0	0	0	300	0	0	300
Livestock Specialties	0	0	0	300	**	0	300
Noncommercial Agricultural Use	0	0	0	0	1,200	0	1,200
Cooperative Game Management Area	0	0	0	0	0	0	65,600
Land Study Bureau	Total 2,579,200	355,200	465,900	386,600	167,100	90,200	4,044,200
State Surveyor's	Total 2,579,200	355,220	465,920	386,560	167,085	90,240	4,044,225

\* Total planimetered areas rounded to nearest hundred acres.  
\*\* Less than 100 acres.



LAND USES ON THE SIX MAJOR ISLANDS OF HAWAII  
Expressed in Percent

Land Use	Hawaii	Kauai	Mau	Oahu	Molokai	Lanai	Total
Grazing	65.1	17.6	42.8	14.4	60.8	2.2	51.9
Orchard	0.6	0.1	*	0.3			0.5
Sugar Cane	5.2	16.6	11.5	10.4			7.1
Timber Trees	2.1	0.5			0.2	6.5	1.5
Urban (undifferentiated)	0.6	1.4	2.0	8.0	1.2	0.6	1.6
Unused, Steep Slopes	1.0	11.6	0.9	11.1	0.7		2.9
Truck Crops	0.2	*	1.2	0.6	0.1		0.3
Rice and Taro	*	0.1	*	0.2			*
Forest Reserve	17.3	47.3	33.2	29.1	27.7		22.9
Military	*	0.8	*	13.4	0.2	0.1	1.4
Miscellaneous Public Uses	7.9	0.4	3.8	1.9	8.1		5.7
Pineapple		3.3	4.2	9.3		17.9	2.4
Water and Truck Crops		0.1		*	0.1		*
Lakes		0.1		0.3	0.1		*
Idle		*	0.4	0.1	0.1		0.1
Forage Crops				0.7			*
Truck Crops and Orchard				0.1			0.1
Livestock and Truck Crops				0.1			*
Livestock Specialties				0.1			*
Noncommercial Agricultural Use					0.7		*
Cooperative Game Management Area							1.6
	100.0	100.0	100.0	100.0	100.0	72.7	100.0

\* Less than 0.1 percent.

