

# FORESTS, FISHERIES, AND MINING

This section presents data on forests and forest products, commercial fishing, and mining and mineral products.

The most recent available statistics show 1.2 million acres of forest reserve and 1.1 million acres of commercial forest in the State, most of it on the Big Island. Over 46,800 acres had been planted in eucalyptus and other species of trees by 1971. The volume of sawtimber reported in 1968 was 789 million board feet. Primary forest products harvested in 1969 had a value of \$331,000. Thirty-three forest and brushland fires burned 2,370 acres in 1974.

The commercial fish catch in fiscal 1974 was 14 million pounds and had a value of \$6.2 million. *Aku* (Skipjack) accounted for more than half of the total value. Other important species were *ahi*, *akule*, *opelu*, and *opakapaka*.

The value of mineral production reached \$43 million in 1974, most of it in cement and stone. The previous all-time high was \$35 million, recorded in 1973.

Important sources of data on these subjects are the United States Census of Agriculture, United States Census of Mineral Industries, and reports of the Hawaii State Department of Land and Natural Resources, Fish and Game Division and Forestry Division. Comparable Mainland statistics are reported in the *Statistical Abstract of the United States: 1974*, Sections 24, 25, and 26.

**Table 254.—FOREST RESERVE, TREES PLANTED, AND FOREST FIRES: 1958 TO 1974**

Year	Forest reserve <sup>1</sup> (1,000 acres)	Acres planted in trees <sup>2</sup>	Forest and brushland fires <sup>3</sup>	
			Number	Acres burned
1958 .....	1,198	189	5	1,276
1959 .....	...	357	42	469
1960 .....	1,196	258	34	26,397
1961 .....	...	...	34	1,941
1962 .....	1,196	1,131	26	3,452
1963 .....	1,196	3,173	7	5,783
1964 .....	1,196	2,057	8	47
1965 .....	1,196	1,318	6	4,097
1966 .....	1,196	2,553	37	2,120
1967 .....	1,196	2,404	16	6,572
1968 .....	1,196	2,039	25	13,339
1969 .....	1,196	1,499	34	45,523
1970 .....	1,196	1,539	62	14,245
1971 .....	1,196	776	49	1,951
1972 .....	1,196	361	67	8,190
1973 .....	1,196	162	75	17,968
1974 .....	1,196	86	33	2,370

<sup>1</sup>As of June 30. Effective July 10, 1961, the area previously known as the forest and water reserve was designated the forest and water reserve within the conservation district. Data include both governmental and private land.

<sup>2</sup>Calendar years through 1960; years ended June 30, 1962 and thereafter. Refers to acreage planted in forest reserves.

<sup>3</sup>Calendar years.

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

**Table 255.—AREA OF FOREST LAND, 1970, AND PLANTED FOREST, 1973, BY ISLAND**  
(In acres)

Island	Forest land, 1970		Area of planted forest, to 1973 <sup>3</sup>
	Total <sup>1</sup>	Commercial <sup>2</sup>	
State total .....	1,986,400	938,300	48,740
Niihau .....	31,100	—	—
Kauai .....	219,900	145,300	5,260
Oahu .....	205,300	124,400	7,179
Molokai .....	78,100	33,500	2,847
Lanai .....	43,900	4,500	512
Kahoolawe .....	15,800	—	—
Maui .....	239,800	63,400	10,644
Hawaii .....	1,152,500	567,200	22,298

<sup>1</sup>Includes commercial (938,300 acres), unproductive (933,700), and productive-reserved (114,400).

<sup>2</sup>Includes Federal military (12,300), State (428,100), miscellaneous corporate (294,900), and miscellaneous individual (203,000).

<sup>3</sup>Chiefly Eucalyptus, other hardwoods, and conifers. Includes arboretum plantings.

Source: Hawaii State Department of Land and Natural Resources, Forestry Division, records; U.S. Forest Service, Institute of Pacific Islands Forestry, records.

**Table 256.—PRIMARY FOREST PRODUCTS HARVESTED: 1958 TO 1969**

Subject	Total	Sawlogs	Craftwood	Veneer logs	Fuelwood	Posts	Treefern
<b>Production<sup>1</sup>:</b>							
1958 .....	—	405	510	—	1,300	65.0	100
1960 .....	—	850	100	30	1,500	37.0	115
1963 .....	—	913	—	—	847	22.0	118
1967 <sup>2</sup> .....	—	3,925	196	—	720	7.1	143
1969 .....	—	1,650	422	1,056	1,720	10.1	55
<b>Average unit value (\$):</b>							
1958 .....	—	100	240	—	14.50	0.83	0.35
1960 .....	—	70	200	300	30.00	0.60	0.38
1963 .....	—	160	—	—	22.43	1.05	0.33
1967 .....	—	40	300	—	38.89	1.69	0.52
1969 .....	—	52	230	47	31.40	1.58	0.49
<b>Total value (\$1,000):</b>							
1958 .....	269	40	121	—	19	54	35
1960 .....	197	57	20	9	45	22	44
1963 .....	230	149	—	—	19	23	39
1967 .....	334	161	58	—	28	12	75
1969 .....	331	86	98	50	54	16	27

<sup>1</sup>Sawlogs, craftwood, and veneer logs in 1,000 board feet, fuelwood in cords, posts in 1,000 pieces, and treefern in 1,000 cubic feet.

Source: U.S. Department of Agriculture, Pacific Southwest Forest and Range Experiment Station, *Forest Products Harvested in Hawaii—1969*, Research Note PSW-239 (1971), p.2.

**Table 257.—LARGEST REPORTED TREES OF SPECIFIED NATIVE AND EXOTIC SPECIES: 1974**

Species	Circum. at 4½ ft. (ft., in.)	Height (feet)	Spread (feet)	Location
<b>NATIVE</b>				
<i>Acacia koa</i> (koa) <sup>1</sup> .....	37-4	140	128	Keauhou, Ka'u
<i>Aleurites moluccana</i> (kukui) .....	10-7	67	59	Pahala, Ka'u
<i>Calophyllum inophyllum</i> (kamani) .....	18-6	59	81	Malama-ki, Puna
<i>Metrosideros collina</i> ('ohi'a-lehua) .....	17-10	84	78	Waipunalei, Hilo
<i>Pandanus tectorius</i> (hala) .....	4-6	35	40	Keaau, Hilo
<i>Santalum pilgeri</i> ('ili'i-ahi, or sandalwood) ...	7-8	65	48	Honomolino, S. Kona
<i>Sapindus saponaria</i> (wingleaf soapberry) ....	10-1	106	84	Hawaii Vol. Nat. Park
<i>Sophora chrysophylla</i> (mamani) .....	12-2	39	42	Mauna Kea For. Res.
<b>EXOTIC</b>				
<i>Araucaria hetrophylla</i> (Norfolk I. pine) .....	16-6	140	75	Lanai City, Lanai
<i>Carica papaya</i> (papaya) .....	4-10	60	12	Kailua, N. Kona
<i>Cassia grandis</i> (pinkshower) .....	10-11	55	40	Reed's Island, Hilo
<i>Casuarina cunninghamiana</i> (river-oak ironwood) .....	6-9	80	42	Kohala Forest Res.
<i>Cocos nucifera</i> (coconut) .....	4-8	94	28	Arboretum, Hilo
<i>Delonix regia</i> (royal poinciana) .....	13-6	48	62	Maunawili, Koolaupoko
<i>Eucalyptus deanei</i> .....	11-0	157	60	Honaunau For. Res.
<i>Eucalyptus saligna</i> .....	12-11	203	70	Kailua, N. Kona
<i>Ficus benghalensis</i> (Indian banyan) .....	44-2	80	231	Lahaina
<i>Ficus retusa</i> (Chinese banyan) .....	90-1	104	195	Keaau, Puna
<i>Macadamia tetraphylla</i> .....	2-9	50	36	Kainaliu, N. Kona
<i>Mangifera indica</i> (mango) .....	24-8	71	70	Rainbow Falls, Hilo
<i>Plumeria rubra</i> (frangipani) .....	4-10	35	38	Arboretum, Hilo
<i>Prosopis pallida</i> (kiawe) .....	13-5	91	81	Puako, S. Kohala
<i>Roystonea regia</i> (royalpalm) .....	7-0	70	30	Honokea, Hawaii

<sup>1</sup>Circumference measured above bulge.

Source: L. W. Bryan, "Champion Trees of Hawaii," *American Forests*, May 1974.

Table 258.—COMMERCIAL FISHING: 1958 TO 1974

Years ended June 30	Fishing boats	Fishermen	Commercial fish landings	
			Pounds	Value (dollars)
1958 .....	533	1,245	10,568,761	2,512,121
1959 .....	508	1,112	13,178,933	2,841,168
1960 .....	437	1,022	14,266,795	2,994,033
1961 .....	443	941	13,730,912	2,898,380
1962 .....	423	940	13,931,171	2,873,274
1963 .....	366	808	10,879,389	2,566,045
1964 .....	373	805	12,099,123	2,738,323
1965 .....	387	717	17,192,431	3,355,553
1966 .....	365	715	15,987,978	3,319,917
1967 .....	397	801	12,354,658	3,147,566
1968 .....	387	760	12,829,326	3,253,622
1969 .....	509	1,028	11,096,116	3,378,553
1970 .....	670	1,264	9,786,726	3,584,936
1971 .....	738	1,373	15,176,525	4,633,877
1972 .....	(NA)	1,544	15,577,302	5,536,385
1973 .....	(NA)	1,857	14,029,491	5,676,780
1974 .....	(NA)	2,051	13,997,435	6,234,933

NA Not available.

Source: Hawaii State Department of Land and Natural Resources, *Report to the Governor, 1971-1972*, pp. 43-44; *Commercial Fish Landings for Fiscal Year—July, 1972 through June, 1973*; *Commercial Fish Landings for Fiscal Year—July, 1973 through June, 1974*; and records.

**Table 259.—COMMERCIAL FISH LANDINGS, BY SPECIES AND ISLAND:  
YEAR ENDED JUNE 30, 1974**

Island and species	Pounds caught	Value (dollars)
Total landings .....	13,997,435	6,234,933
<b>ISLAND</b>		
Hawaii .....	1,551,815	891,671
Maui .....	981,043	247,549
Lanai .....	11,330	6,550
Molokai .....	21,202	13,398
Oahu .....	11,149,804	4,956,949
Kauai .....	282,241	118,816
<b>SPECIES<sup>1</sup></b>		
Sea catch, total <sup>2</sup> .....	13,974,651	6,220,660
Aku (Skipjack) .....	10,261,257	3,168,291
Ahi (Yellowfin) .....	946,371	778,509
Akule .....	543,032	275,908
Ahi (Bigeye) .....	447,439	711,766
Opelu .....	190,144	138,836
Stripe Marlin .....	169,255	96,954
Opakapaka .....	136,482	121,576
Mahimahi .....	113,848	95,295
Hahalalu .....	94,737	53,014
Pacific Blue Marlin .....	89,009	18,413
Uku .....	77,170	56,601
Ono .....	71,228	29,819
Ulua .....	57,645	49,200
Ulaula Koae (Onaga) .....	46,564	79,314
Crab (Kona) .....	40,552	70,073
Pond catch, total .....	22,784	14,273

<sup>1</sup>Shown separately for all species over 50,000 pounds or \$50,000.

<sup>2</sup>Includes species not shown separately.

Source: Hawaii State Department of Land and Natural Resources, Division of Fish and Game, *Commercial Fish Landings for Fiscal Year—July, 1973 through June, 1974* (September 1974).

**Table 260.—COMMERCIAL LIMU HARVEST: 1963 TO 1974**

Calendar year	Pounds taken	Pounds sold	Value (dollars)
1963 .....	4,738	4,738	1,729
1964 .....	12,271	12,266	2,956
1965 .....	3,230	3,230	700
1966 .....	—	—	—
1967 .....	2,421	2,421	542
1968 .....	355	355	112
1969 .....	74,139	74,012	19,128
1970 .....	49,427	49,302	16,166
1971 .....	88,813	88,813	28,366
1972 .....	96,563	96,460	34,838
1973 .....	97,140	96,987	35,909
1974 .....	46,366	45,885	23,899

Source: Hawaii State Department of Land and Natural Resources, Division of Fish and Game, records.

**Table 261.—MINERAL OPERATIONS: 1909 TO 1967**

Kind of operation and year	Establishments	Employees	Payroll (\$1,000)	Value added in mining (\$1,000)	Value of shipments and receipts (\$1,000)	Capital expenditures (\$1,000)
Mineral industries only:						
1958 .....	20	421	1,724	4,550	5,847	704
1963 .....	44	315	1,658	4,909	6,525	520
1967 .....	12	200	1,600	5,000	5,500	1,800
Including operations in manufactures:						
1909 .....	6	43	14	16	21	(NA)
1919 .....	5	151	95	202	251	(NA)
1954 .....	13	171	598	1,266	1,778	193
1958 .....	24	445	1,820	4,887	6,207	704
1963 .....	49	339	1,758	5,677	7,462	520
1967 .....	18	(D)	(D)	(D)	(D)	(D)

D Withheld to avoid disclosing figures for individual companies.

NA Not available.

Source: U.S. Bureau of the Census, *Census of Mineral Industries, 1963*, MIC63(2)-10, table 1, and *Census of Mineral Industries, 1967*, MIC67(2)-10, table 1.

**Table 262.—MINERAL PRODUCTION: 1960 TO 1974**

(Production as measured by mine shipments, sales, or marketable production, including consumption by producers.)

Year	Quantity (1,000 short tons)		Value (\$1,000)			
	Cement	Stone	Total	Cement	Stone	Other minerals <sup>1</sup>
1960 .....	21	3,535	9,254	571	6,443	2,240
1961 .....	202	4,429	14,588	5,574	7,656	1,358
1962 .....	212	4,071	14,844	6,055	6,883	1,906
1963 .....	279	3,844	15,307	7,125	6,480	1,702
1964 .....	323	5,282	19,605	8,877	8,765	1,963
1965 .....	294	5,172	20,835	8,297	9,353	3,185
1966 .....	329	5,079	21,253	9,046	9,482	2,725
1967 .....	262	4,100	16,936	7,360	7,207	2,369
1968 .....	346	5,211	23,225	9,254	11,273	2,698
1969 .....	390	6,534	29,539	10,544	16,059	2,936
1970 .....	406	6,331	28,965	10,334	15,538	3,093
1971 .....	386	6,056	28,107	10,627	14,357	3,123
1972 .....	415	5,005	28,074	11,116	13,494	3,464
1973 .....	469	7,180	35,147	13,750	18,466	2,931
1974 <sup>2</sup> .....	490	8,095	42,714	16,600	23,336	2,778

<sup>1</sup>Chiefly sand and gravel; pumice, pumicite, and volcanic cinder; and lime.<sup>2</sup>Preliminary.Source: U.S. Bureau of Mines, *Minerals Yearbook* (annual) and "The Mineral Industry in Hawaii," *Mineral Industry Surveys* (annual preliminary and advance summary reports).