

Section 20

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 and water reserve and 948,000 acres of commercial forest in the State, most of it on the Big Island. About 46,000 acres had been planted in eucalyptus and other species of trees by mid-1981. Forest products harvested in 1977 had a value of \$3.5 million, including \$2.3 million from logs for fiber. More than 500 forest and brushland fires burned 15,000 acres in fiscal 1981.

The commercial fish catch in fiscal year 1981 amounted to 11 million pounds and had a value of \$12 million. Aku (Skipjack) accounted for about 28 percent of the total value. Other important species are ahi, mahimahi, ono, lobster, opelu and opakapaka. Commercial fishermen numbered 2,577; they operated 1,266 fishing vessels, serving about 126 fishery wholesaling and processing establishments.

The value of mineral production reached \$58 million in 1981, most of it in cement (\$23 million) and stone (\$31 million). The 1981 total, only slightly below the all-time high reached in 1979, was double the level of the early 1970s.

Important sources of data on these subjects are the United States Census of Agriculture, United States Census of Mineral Industries, and reports and records of the U.S. Bureau of Mines, National Marine Fisheries Service, and Hawaii State Department of Land and Natural Resources, Aquatic Resources Division and Forestry and Wildlife Division. Historical Statistics of Hawaii, Section 14, summarizes the data for earlier periods. Comparable Mainland statistics are reported in the Statistical Abstract of the United States: 1981, Sections 25, 26 and 27.

Table 462.-- FOREST ACREAGE, BY ISLANDS: 1970-1981

Island	Forest and water reserve, 1981 ^{1/} (acres)	Forest land, 1970 (acres)			Planted forest, June 30, 1981 (acres)	
		Total	Com-mercial ^{2/}	Noncom-mercial ^{3/}	Planted in preceding year	Total standing
State total .	1,186,462	1,986,400	947,800	1,038,600	372	45,986
Hawaii	697,361	1,152,500	569,400	583,100	136	17,701
Maui	155,247	239,800	67,500	172,300	60	11,446
Kahoolawe	-	15,800	-	15,800	-	-
Lanai	6,150	43,900	4,500	39,400	-	512
Molokai	46,445	78,100	34,000	44,100	47	3,205
Oahu	119,319	205,300	126,500	78,800	12	7,036
Kauai	161,970	219,900	145,900	74,000	117	6,086
Niihau	-	31,100	-	31,100	-	-
Other islands	-	-	-	-	-	-

^{1/} Forest and water reserve within conservation district, as of June 30.

^{2/} Includes federal military, state, miscellaneous corporate, and miscellaneous individual forest land.

^{3/} Unproductive or productive-reserved.

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

Table 463.-- FOREST AND BRUSHLAND FIRES: 1980 AND 1981

[Years ended June 30.]

County	Number of fires		Acres burned	
	1980	1981	1980	1981
State total	394	508	2,439	15,152
Hawaii	177	246	420	3,823
Maui	95	120	1,741	9,284
Honolulu	105	117	200	1,924
Kauai	17	25	78	122

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

Table 464.-- FOREST PRODUCTS HARVESTED: 1977

Forest product	Output		Unit price (dollars)	Total value (dollars)
	Unit	Amount		
All products .....	...	...	...	3,465,233
Logs for lumber	MBF <u>1</u>	2,750	209	574,833
Logs for craftwood	Cords <u>2</u> / ..	299	224	51,330
Logs for fiber	BDT <u>3</u> /	55,502	41	2,310,500
Tree fern	Cubic feet	95,000	1.42	135,000
Fuelwood from trees	Cords <u>2</u> / ..	4,191	47	194,563
Fuelwood for charcoal	Cords <u>2</u> / ..	800	34	26,820
Fuel from mill residue ...	Tons	5,000	10.50	52,500
Round posts	Posts	32,700	3.14	102,604
Split posts	Posts	3,525	2.93	10,321
Driftwood	Cords <u>2</u> / ..	2	300	600
Pallets	Number	20	20	400
Bamboo	Lineal feet	18,844	0.04	742
Kukui nuts	Tons	13.86	362	5,020

1/ Thousand board feet.

2/ One cord equals 128 cubic feet

3/ Bone dry ton, equal to 2,000 lbs. of wood at 0% moisture content.

Source: Hawaii State Department of Land and Natural Resources, Division of Forestry, Hawaiian Forest Products 1977, table II.

Table 465.-- FISHERY OPERATING UNITS AND LANDINGS: 1971 TO 1981

Year	Fisher- men <u>1/</u>	Vessels and boats <u>2/</u>		Fishery estab- lish- ments <u>3/</u>	Landings <u>4/</u>	
		Motor vessels	Boats		Quantity (1,000 lb.)	Value (\$1,000)
1971 ...	1,533	89	812	130	16,873	5,238
1972 ...	1,732	101	839	123	14,443	5,743
1973 ...	2,091	104	1,097	125	14,035	6,115
1974 <u>5/</u>	1,992	97	1,066	123	10,990	6,028
1975 ...	2,197	109	1,278	132	9,209	6,313
1976 ...	2,367	101	1,336	135	14,761	8,879
1977 ...	2,574	101	(NA)	126	13,288	10,180
1978 ...	2,409	(NA)	1,100	(NA)	12,787	12,100
1979 ...	2,447	113	1,028	(NA)	13,664	10,659
1980 ...	2,497	134	1,055	(NA)	11,435	11,870
1981 ...	2,572	147	1,119	(NA)	13,396	18,338

NA Not available.

1/ Persons licensed as commercial fishermen by the Hawaii State Department of Land and Natural Resources.

2/ A vessel is defined as a craft with a capacity of 5 net tons or more; a boat, as a craft with a capacity of less than 5 net tons.

3/ Fishery wholesaling and processing establishments.

4/ Data may differ from corresponding totals reported by the State Fish and Game Division, which, unlike the NMFS series shown here, include unsold fish.

5/ Methods of collecting data on operating units were changed in 1974.

Source: U.S. Department of Commerce, National Marine Fisheries Service, Fishery Statistics of the United States (annual, 1971-1975), and information provided August 4, 1981 and June 30, 1982.

Table 466.-- COMMERCIAL FISHING: 1962 TO 1981

[Years ended June 30. Data for 1977-1980 have been revised from the 1981 edition, table 455.]

Year	Number of commercial fishers	Commercial fish catch ^{1/}		
		Pounds caught	Pounds sold	Value to primary producers (dollars)
1962	940	13,800,761	13,173,259	2,870,702
1963	808	10,685,604	10,629,701	2,539,189
1964	805	12,013,869	11,970,398	2,732,125
1965	717	17,105,515	17,053,925	3,340,651
1966	715	15,985,626	15,924,854	3,318,803
1967	801	12,344,555	12,274,531	3,146,177
1968	760	12,828,387	12,740,307	3,253,538
1969	1,028	10,065,623	9,974,455	2,798,424
1970	1,264	9,786,726	9,588,319	3,585,166
1971	1,373	15,176,525	14,945,539	4,633,875
1972	1,544	15,577,669	15,246,519	5,536,521
1973	1,677	14,029,491	13,719,284	5,676,783
1974	2,085	13,997,774	13,660,574	6,234,924
1975	1,991	10,801,441	10,404,019	6,242,614
1976	2,283	11,893,141	11,332,659	7,508,395
1977	2,368	15,298,515	14,763,816	9,433,781
1978	2,574	13,672,061	13,139,142	11,115,964
1979 ^{2/} .	2,447	12,310,524	11,890,241	12,673,328
1980 ^{2/} .	2,525	10,418,964	9,946,065	10,497,456
1981 ^{2/} .	2,577	10,890,468	10,465,731	11,828,575

^{1/} Represents the total catches of all licensed commercial fishers. Includes both sea and pond catch, but excludes coral harvests.

^{2/} Incomplete due to unreported aku (skipjack tuna) boat and flagline boat catches.

Source: Hawaii State Department of Land and Natural Resources, Commercial Fish Landings for Fiscal Year (annual), as revised, and records.

Table 467.-- COMMERCIAL FISH CATCH, BY SPECIES: 1980

[Calendar year data.]

Species <u>1/</u>	Pounds caught	Pounds sold	Value (dollars)
Total catch <u>2/</u>	10,182,421	9,741,782	10,993,577
Sea catch, all species <u>3/</u>	10,166,907	9,726,273	10,969,202
Aku (Skipjack) <u>2/</u>	3,987,578	3,961,057	3,100,941
Ahi (Yellowfin) <u>2/</u>	2,634,710	2,502,883	3,233,440
Opelu	491,141	474,114	523,071
Pacific Blue Marlin <u>2/</u>	441,530	382,686	191,095
Akule	436,382	400,623	402,762
Ono <u>2/</u>	265,869	237,941	451,926
Mahimahi <u>2/</u>	239,004	211,666	457,572
Opakapaka	233,066	222,896	483,787
Ulua	159,642	148,239	146,201
Ahipahala (Albacore) <u>2/</u>	149,623	149,433	118,646
Lobster (spiny)	98,665	97,731	587,612
Uku	75,235	72,349	161,081
Pond catch, all species	15,514	15,509	24,375

1/ Shown separately for all species over 100,000 lb. or \$100,000.

2/ Data not final due to unreported aku and flagline boat catches.

3/ Including species not shown separately.
Source follows next table.

Table 468.-- COMMERCIAL FISH LANDINGS, BY ISLANDS: 1980

[Calendar year data. Incomplete due to some unreported aku boat and flagline boat catches.]

Island	Pounds caught	Value (dollars)
State total	10,182,421	10,993,578
Hawaii	3,207,279	3,884,675
Maui	1,116,640	914,665
Lanai	16,110	16,643
Molokai	26,298	27,824
Oahu	5,184,258	5,459,195
Kauai	631,836	690,576

Source: Hawaii State Department of Land and Natural Resources, Report to the Governor, 1980-81 (March 1982), pp. 15-16.

Table 469.-- MINERAL INDUSTRIES: 1958 TO 1977

Subject	1958	1963	1967	1972	1977
Including mines at manufactures					
Number of establishments	24	49	18	21	10
With 20 employees or more	8	4	5	5	3
Value added in mining (million dollars)	4.9	5.7	(D)	(D)	(D)
Excluding mines at manufactures					
Number of establishments <u>1/</u>	20	44	12	15	7
With 20 employees or more	8	4	3	5	2
All employees: <u>2/</u>					
Number (1,000) .....	.4	.3	.2	.3	.1
Payroll (million dollars)	1.7	1.7	1.6	2.4	1.9
Production, development, and exploration workers:					
Number <u>2/</u> (1,000) .....	.4	.2	.2	.2	.1
Hours (millions) .....	.7	.6	.4	.4	.2
Wages <u>2/</u> (million dollars)	1.4	1.5	1.3	1.8	1.5
Value added in mining (million dollars)	4.6	4.9	5.0	9.0	8.1
Cost of supplies used, purchased machinery installed, etc. (million dollars)	2.0	2.1	2.3	4.1	2.9
Value of shipments and receipts <u>3/</u> (million dollars)	5.8	6.5	5.5	11.0	9.7
Capital expenditures (million dollars) .....	.7	.5	1.8	2.0	1.3

Footnotes and source on next page.

Table 469.-- MINERAL INDUSTRIES : 1958 TO 1977 - Con.

(D) Withheld to avoid disclosing operations of individual companies.

1/ In 1977, 1972, and 1967, data for companies without paid employees were excluded from the census of mineral industries.

2/ For crushed and broken stone, sand and gravel, clay, and gypsum mining operations in manufacturing establishments, the number of production, development, and exploration workers was estimated from reported figures for hours worked. No data were obtained on other employees at such operations; hence, the same employment and payroll figures are included for all employees as for production, development, and exploration workers.

3/ For crushed and broken stone, sand and gravel, clay, and gypsum, mining operations in manufacturing establishments, includes the estimated value of minerals produced and used in the same establishment in making manufactured products. For all years, represents gross value of shipments and contains some duplication due to the transfer of crude minerals from one establishment to another for preparation.

Source: U.S. Bureau of the Census, 1977 Census of Mineral Industries, Geographic Area Series, Pacific Division, MIC77-A-9 (March 1981), table 1.

Table 470.-- NONFUEL MINERAL PRODUCTION SUMMARY: 1960 TO 1981

[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
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	502	7,638	42,042	17,111	21,370	3,561
1975	469	7,569	49,710	20,704	25,319	3,687
1976	339	6,092	42,252	18,410	21,193	2,649
1977	330	5,759	39,980	16,922	19,880	3,178
1978	452	6,027	52,743	26,454	23,840	2,449
1979	481	6,869	63,904	30,423	28,969	4,512
1980 <u>1/</u> ..	371	6,341	59,676	24,682	30,645	4,349
1981 <u>2/</u> ..	327	6,129	58,436	23,100	30,622	4,714

1/ Revised from 1981 edition, table 460.

2/ Preliminary.

Source: U.S. Department of the Interior, Bureau of Mines, Minerals Yearbook (annual); Minerals in the Economy of Hawaii (annual, 1978 and 1979); and "The Mineral Industry of Hawaii," Mineral Industry Surveys (annual).

Table 471.-- NONFUEL MINERAL PRODUCTION: 1980 AND 1981

[Production as measured by mine shipments, sales, or marketable production, including consumption by producers.]

Mineral	Quantity (1,000 short tons)		Value (\$1,000)	
	1980 <u>1/</u>	1981 <u>2/</u>	1980 <u>1/</u>	1981 <u>2/</u>
Total	(X)	(X)	59,676	58,436
Cement:				
Portland	358	316	23,722	22,200
Masonry	13	11	960	900
Pumice	314	373	1,200	1,515
Sand and gravel	1,035	1,050	2,855	2,900
Stone:				
Crushed	6,341	6,129	30,634	30,610
Dimension	(W)	(W)	11	12
Other nonmetals <u>3/</u>	(X)	(X)	294	299

W Withheld to avoid disclosing company proprietary data; included with "other nonmetals."

X Not applicable.

NA Not available.

1/ Revised from 1981 edition, table 461.

2/ Preliminary.

3/ Includes items indicated by symbol W.

Source: U.S. Bureau of Mines, "The Mineral Industry of Hawaii in 1981," Mineral Industry Surveys (January 21, 1982).