

Section 20

FORESTS, FISHERIES, AND MINING

This section presents data on forests and forest products, commercial fishing, and mining and mineral products. Other statistics on forest products appear in Section 19.

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. More than 45,000 acres had been planted in eucalyptus and other species of trees by mid-1980. Forest products harvested in 1977 had a value of \$3.5 million, including \$2.3 million from logs for fiber. More than 390 forest and brushland fires burned 2,439 acres in fiscal 1980.

The commercial fish catch in fiscal year 1980 amounted to 9.6 million pounds and had a value of \$9.7 million. Aku (Skipjack) accounted for about one-third of the total value. Other important species are ahi, ahipalala, akule, opelu and opakapaka. Commercial fishermen numbered 2,497; they operated 1,377 fishing vessels, serving 35 fishery wholesaling and processing establishments.

The value of mineral production reached \$61 million in 1980, most of it in cement (\$28 million) and stone (\$30 million). The 1980 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, Fish and Game 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: 1980, Sections 25, 26 and 27.

Table 452.-- FOREST ACREAGE AND FIRES, BY ISLANDS: 1970-1980

Island	Forest and water reserve, 1980 ^{1/} (acres)	Forest land, 1970 (acres)		
		Total	Commercial ^{2/}	Noncommercial ^{3/}
State total	1,186,462	1,986,400	947,800	1,038,600
Hawaii	697,361	1,152,500	569,400	583,100
Maui	155,247	239,800	67,500	172,300
Kahoolawe	-	15,800	-	15,800
Lanai	6,150	43,900	4,500	39,400
Molokai	46,445	78,100	34,000	44,100
Oahu	119,319	205,300	126,500	78,800
Kauai	161,970	219,900	145,900	74,000
Niihau	-	31,100	-	31,100
Other islands	-	-	-	-

Island	Planted forest, June 30, 1980 (acres)		Forest and brushland fires, fiscal 1980	
	Planted in preceding year	Total standing	Number	Acres burned
State total	151	45,614	394	2,439
Hawaii	94	17,565	177	420
Maui	1	11,386		
Kahoolawe	-	-	95	1,741
Lanai	-	512		
Molokai	-	3,158		
Oahu	-	7,024	105	200
Kauai	56	5,969		
Niihau	-	-	17	78
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 453.-- 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 454.-- FISHERY OPERATING UNITS AND LANDINGS: 1970 TO 1980

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)
1970 ...	1,436	80	686	156	11,051	3,900
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

NA Not available.

1/ Persons licensed as commercial fishermen by the Hawaii State Department of Land and Natural Resources, Fish and Game Division. Data refer to June 30 of the following year.

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. Data on vessels and boats refer to June 30 of the following year.

3/ Fishery wholesaling and processing establishments, as of June 30 of the year indicated.

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, 1970-1975), and information provided August 4, 1981.

Table 455.-- COMMERCIAL FISHING: 1962 TO 1980

[Years ended June 30.]

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	2,367	15,298,515	14,763,816	9,433,781
1978	2,574	13,669,561	13,136,642	11,108,165
1979 ^{2/} .	2,447	11,300,456	10,881,921	11,760,278
1980 ^{2/} .	2,497	9,563,990	9,095,649	9,674,652

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

^{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 456.-- COMMERCIAL FISH CATCH, BY SPECIES: 1979

[Calendar year data.]

Species <u>1/</u>	Pounds caught	Pounds sold	Value (dollars)
Total catch <u>2/</u>	10,548,248	10,106,488	10,501,177
Sea catch, all species <u>3/</u>	10,530,723	10,088,966	10,477,958
Aku (Skipjack) <u>2/</u>	5,135,242	5,100,554	3,438,233
Ahi (Yellowfin) <u>2/</u>	2,063,697	1,950,272	2,658,093
Pacific Blue Marlin <u>2/</u>	431,557	345,477	172,530
Opelu	428,004	414,668	463,329
Akule	367,429	329,458	353,623
Opakapaka	205,353	196,649	440,538
Ono <u>2/</u>	198,612	170,916	304,321
Ahi (Bigeye) <u>2/</u>	169,894	169,700	592,563
Mahimahi <u>2/</u>	169,159	145,768	283,114
Striped Marlin <u>2/</u>	110,465	101,955	136,066
Ulua	94,328	87,281	121,347
Uku	87,903	85,004	162,737
Onaga	48,780	46,198	126,060
Pond catch, total	17,525	17,522	23,219

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

2/ Incomplete due to some unreported boat catches.

3/ Including species not shown separately.

Source follows next table.

Table 457.-- COMMERCIAL FISH LANDINGS, BY ISLANDS: 1979

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

Island	Pounds caught	Value (dollars)
State total	10,548,213	10,501,177
Hawaii	2,738,286	3,280,006
Maui	684,850	571,004
Lanai	17,236	13,278
Molokai	27,181	25,620
Oahu	6,595,895	6,140,407
Kauai	484,765	470,772

Source: Hawaii State Department of Land and Natural Resources, Report to the Governor, 1979-1980 (March 1981).

Table 458.-- MINERAL INDUSTRIES: 1958 TO 1977

[Excluding mines at manufactures.]

Subject	1958	1963	1967	1972	1977
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 ex- ploration 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 follow next table.

Table 459.-- MINERAL INDUSTRIES AND MINES AT MANUFACTURES:
1958 TO 1977

Subject	1958	1963	1967	1972	1977
Number of establishments <u>1/</u>	24	49	18	21	10
With 20 employees or more	8	4	5	5	3
All employees: <u>2/</u>					
Number (1,000) .....	.4	.3	(D)	(D)	(D)
Payroll (million dollars)	1.8	1.8	(D)	(D)	(D)
Production, development, and ex- ploration workers:					
Number <u>2/</u> (1,000) .....	.4	.3	(D)	(D)	(D)
Hours (millions) .....	.8	.6	(D)	(D)	(D)
Wages <u>2/</u> (million dollars)	1.5	1.6	(D)	(D)	(D)
Value added in mining (million dollars)	4.9	5.7	(D)	(D)	(D)
Cost of supplies used, purchased machinery installed, etc. <u>4/</u> (million dollars)	2.0	2.3	(D)	(D)	(D)
Value of shipments and receipts <u>3/</u> (million dollars)	6.2	7.5	(D)	(D)	(D)
Capital expenditures (million dollars) <u>5/</u> .....	.7	.5	(D)	(D)	(D)

Footnotes and source on next page.

Table 459.-- MINERAL INDUSTRIES AND MINES AT MANUFACTURES:
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.

4/ Data for mineral operations in manufacturing establishments exclude purchased machinery installed.

5/ Excludes data for crushed and broken stone, sand and gravel, clay, and gypsum mining operations in manufacturing establishments.

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 460.-- MINERAL PRODUCTION: 1960 TO 1980

[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 <u>1/</u>
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 <u>2/</u> ..	481	6,869	63,904	30,423	28,969	4,512
1980 <u>3/</u> ..	393	6,301	61,257	27,500	29,700	4,057

1/ Chiefly sand and gravel; pumice, pumicite, and volcanic cinder; and lime.

2/ Revised from 1980 edition, table 406.

3/ Preliminary.

Source: U.S. Bureau of Mines, Minerals Yearbook (annual), "The Mineral Industry in Hawaii," Mineral Industry Surveys (annual preliminary and advance summary reports), and Minerals in the Economy of Hawaii (annual, 1978 and 1979).

Table 461.-- NONFUEL MINERAL PRODUCTION: 1979 AND 1980

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

Mineral	Quantity (1,000 short tons)		Value (\$1,000)	
	1979 <u>1/</u>	1980 <u>2/</u>	1979 <u>1/</u>	1980 <u>2/</u>
Total	(X)	(X)	63,904	61,257
Cement:				
Portland	469	379	29,346	26,100
Masonry	12	14	1,077	1,400
Gem stones	(NA)	(NA)	(W)	19
Pumice	359	397	1,240	1,586
Sand and gravel	1,081	800	3,063	2,300
Stone:				
Crushed	6,868	6,300	28,969	29,700
Dimension	1	1	(W)	(W)
Other nonmetals <u>3/</u>	(X)	(X)	209	152

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

X Not applicable.

NA Not available.

1/ Revised from 1980 edition, table 406.

2/ Preliminary.

3/ Includes items indicated by symbol W.

Source: U.S. Bureau of Mines, "The Mineral Industry of Hawaii in 1980," Mineral Industry Surveys (January 16, 1981).