

Table
Number Table Name

(Click on the table number to go to corresponding table)

[Narrative](#)

20.01	Forest and Natural Area Acreage, by Islands: June 30, 2004
20.02	Woodland on Farms, 1992, 1997, and 2002, and by Counties, 2002
20.03	Forest and Brushland Fires, by Cause of Fire: 2001 to 2003
20.04	Commercial Fishing: 1989 to 2004
20.05	Commercial Fish Catch, by Species: 2002 to 2004
20.06	Commercial Sea Landings, by Islands: 2002 to 2004
20.07	Commercial Sea Landings, by Fishing Method: 2002 to 2004
20.08	Fish Populations Around Selected Shoreline Areas: Year Ending June 30, 2001
20.09	Most Abundant and Heaviest Fish Species at Specified Locations: Year Ending June 30, 2001
20.10	Mineral Industries: 1977 to 2002
20.11	Nonfuel Mineral Production: 2001 to 2003

Section 20

FORESTRY, FISHERIES, AND MINING

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

Important sources of data on these subjects are *the United States Census of Mineral Industries* and *Mineral Industry Surveys*, U.S. Census Bureau, *2002 Economic Census, Geographic Area Series, Mining*, and reports and records of the Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources and Division of Forestry and Wildlife. *Historical Statistics of Hawaii*, Section 14, summarizes the data for earlier periods. Comparable national statistics are reported in the *Statistical Abstract of the United States: 2004-2005*, Sections 18.

**Table 20.01-- FOREST AND NATURAL AREA ACREAGE, BY ISLANDS:
JUNE 30, 2004**

[Data have remained constant since 1996]

Island	Conservation district forest land		Natural areas 3/	
	Forest reserve land 1/	Private forest land 2/	Number of areas	Acres
2004				
State total	643,134	328,742	19	109,164
Hawaii	438,416	106,745	8	82,535
Maui	73,227	53,180	4	17,123
Kahoolawe	-	-	-	-
Lanai	-	6,150	-	-
Molokai	16,030	-	2	2,950
Oahu	32,462	88,817	3	1,770
Kauai	82,999	73,850	2	4,786
Niihau	-	-	-	-

1/ State-owned and privately-owned lands under surrender agreement in forest reserve system.

2/ Private forest land within conservation district. The majority of these lands were previously in the forest reserve system.

3/ Includes Waimanu Research Reserve (3,600 acres) and Alakai Wilderness Preserve (9,939 acres).

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

Table 20.02-- WOODLAND ON FARMS, 1992, 1997, AND 2002, AND BY COUNTIES, 2002

[Acres]

Use	1992	1997	2002				
			State total	Hawaii	Honolulu	Kauai	Maui
Total	109,391	108,704	117,685	86,632	6,675	(D)	(D)
Pastured	40,909	31,844	41,467	(D)	787	(D)	461
Not pastured	68,482	76,860	76,218	(D)	5,888	(D)	(D)

D Withheld to avoid disclosing data for individual farms.

Source: U.S. Department of Agriculture, *1997 Census of Agriculture, Hawaii*, (March 1999), pp. 19 and 158. *2002 Census of Agriculture, Hawaii*, (June 2004), p. 195.

**Table 20.03-- FOREST AND BRUSHLAND FIRES, BY CAUSE OF FIRE:
2001 TO 2003**

Cause of Fire	Number of Fires			Acres burned		
	2001	2002	2003	2001	2002	2003
State total	108	191	107	1,080.3	2,383.4	16,585.4
Lighting	-	1	-	-	0.1	-
Campfire	8	9	5	6.3	0.8	12.2
Smoking	13	13	5	16.3	28.7	2.4
Debris burning	7	23	9	17.7	9.0	372.5
Arson	13	16	15	117.6	139.4	2.6
Equipment	5	7	8	61.5	0.7	302.5
Railroads	-	-	-	-	-	-
Children	3	5	1	11.6	1.8	0.1
Miscellaneous	59	117	64	849.3	2,202.9	15,893.1

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

Table 20.04-- COMMERCIAL FISHING: 1989 TO 2004

[Fiscal years ending June 30]

Year	Number of commercial fishermen	Commercial fish catch 1/		
		Pounds landed	Pounds sold	Value to primary producers (dollars)
1989	3,491	14,008,279	13,524,731	29,815,290
1990	3,551	16,663,945	16,090,478	39,902,182
1991	4,043	22,218,099	21,331,184	53,769,946
1992	3,800	23,578,601	22,761,039	55,381,574
1993	3,836	25,209,513	24,562,796	61,059,027
1994	4,060	24,028,693	23,310,535	57,999,092
1995	3,827	23,970,722	22,945,408	55,283,593
1996	3,672	23,968,916	23,018,189	52,443,466
1997	3,632	25,319,795	24,589,553	53,343,330
1998	3,648	26,191,724	25,264,158	55,854,728
1999	3,796	26,874,045	25,845,545	54,848,585
2000	3,898	26,844,548	26,064,726	60,473,528
2001 2/	3,465	21,150,892	20,355,033	45,546,327
2002 2/	3,081	21,270,643	20,543,297	44,852,187
2003 2/	3,434	23,530,219	(3/)	(3/)
2004 2/	2,971	21,251,495	(3/)	(3/)

1/ Represents the total catches of all licensed commercial fishers. Includes both sea and pond catches.

2/ Figures for 2001-2004, excludes pond catches.

3/ Due to revisions to the commercial fishing report forms in October 2002, licensed commercial fishers no longer report ex-vessel landing values. The latter information is collected from a fish dealer reporting system. The Division of Aquatic Resources is developing an application to integrate the fishing and fish dealer reporting systems to summarize landings with ex-vessel landing value information. Therefore, only total landings reported by commercial fishers are available at this time.

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

Table 20.05-- COMMERCIAL FISH CATCH, BY SPECIES: 2002 TO 2004

[Fiscal years ending June 30, pounds landed, excludes pond catches]

Species	2002	2003	2004
Total catch	21,263,291	23,530,219	21,251,495
Tunas	13,549,469	15,136,413	12,181,111
Aku (skipjack)	1,143,130	1,395,947	936,216
Tombo	1,938,809	1,709,570	455,892
Bigeye (ahi)	6,848,066	8,997,013	8,709,471
Yellowfin (ahi)	3,603,850	3,023,234	2,067,933
Billfishes	2,765,159	2,482,322	2,731,690
Blue marlin	1,259,084	884,875	882,585
Shortnose spearfish	251,440	473,596	407,713
Striped marlin	822,603	851,048	1,206,584
Swordfish	403,939	256,908	221,158
Miscellaneous pelagic species	3,065,371	3,895,738	4,353,262
Mahimahi	1,080,343	1,310,002	1,678,615
Monchong	353,161	486,931	598,297
Ono	705,150	905,664	797,655
Opah	743,400	938,089	925,773
Walu	(NA)	234,460	329,518
Deep bottom fishes	524,491	560,169	558,893
Ehu	30,812	25,619	31,809
Hapuupuu	31,429	54,769	54,680
Opakapaka	124,415	164,626	110,652
Uku	123,525	125,503	168,494
Ulaula (onaga)	130,881	117,137	135,275
Akule/opelu	741,915	849,759	860,756
Akule	470,941	474,683	533,606
Opelu	210,805	359,715	309,051
Jacks	69,856	83,555	73,249
Inshore fishes	277,577	254,583	233,949
Sharks	174,908	183,340	184,814
Mako	(NA)	122,174	102,524
Lobsters	9,871	7,011	6,360
Crabs	15,533	23,201	23,970
Shrimps	5,079	4,846	2,785
Seaweeds	11,896	7,666	10,759
Miscellaneous	52,166	41,616	29,897

(NA) Not available.

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources, *Commercial Fish Landings, State of Hawaii--Fiscal Years 2002-2004* and records.

Table 20.06-- COMMERCIAL SEA LANDINGS, BY ISLANDS: 2002 TO 2004

[Fiscal years ending June 30, pounds landed]

Island	2002	2003	2004
State total	21,263,291	23,530,219	21,251,495
Hawaii	3,116,854	3,048,421	2,166,985
Maui	429,899	469,434	606,318
Lanai	13,036	20,535	21,390
Molokai	24,246	14,060	17,460
Oahu	17,146,560	19,375,279	17,883,865
Kauai and Niihau	532,696	602,490	555,477

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

**Table 20.07-- COMMERCIAL SEA LANDINGS, BY FISHING METHOD:
2002 TO 2004**

[Fiscal years ending June 30, pounds landed]

Fishing method	2002	2003	2004
All methods	21,263,291	23,530,219	21,251,495
Aku pole and line	791,728	934,867	692,837
Longline	14,093,382	16,647,779	14,868,455
Handline	3,165,782	2,283,129	1,744,969
Trolling	2,382,569	2,359,076	2,577,412
Net	690,460	707,972	763,207
Trap	38,355	54,642	42,112
All other methods	101,015	542,754	562,503

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources, *Commercial Fish Landings, State of Hawaii--Fiscal Years 2002-2004* and records.

**Table 20.08-- FISH POPULATIONS AROUND SELECTED SHORELINE
AREAS: YEAR ENDING JUNE 30, 2001**

Location	Species	Fish per acre	Pounds per acre
Marine Life Conservation Districts:			
Hanauma Bay, Oahu:			
Inshore	59	3,067	1,473
Offshore	87	3,166	943
Pupukea, Oahu	89	8,123	1,717
Waikiki, Oahu	42	1,230	246
Molokini Shoal, Maui	58	4,234	623
Honolua-Mokuleia Bay, Maui	37	5,190	682
Manele-Hulopoe Bays, Lanai	62	7,462	1,368
Kealakekua Bay, Hawaii	43	2,138	274
Lapakahi, Hawaii	41	2,617	118
Wailea Bay, Hawaii	41	1,976	255
Old Kona Airport, Hawaii	19	2,003	208
Artificial reefs:			
Maunalua Bay Tire Reef, Oahu	32	5,056	810
Maunalua Bay "Cee Bee 24 Barge," Oahu	45	2,821	321
Maunalua Bay "Mud Scow Barge," Oahu	39	3,906	273
Maunalua Bay "Keehi Barge," Oahu	39	5,148	525
Maunalua Bay "Landing Craft," Oahu	25	833	82
Waianae "Z-Slabs," Oahu	34	1,368	155
Waianae "Landing Craft," Oahu	27	1,098	135
Waianae "Mahi," Oahu	42	7,227	881
Keawakapu Tire Reef, Maui	(NA)	3,814	540
Fisheries Management Areas:			
Waikiki-Diamond Head, Oahu 1/	44	461	56
Waikiki-Diamond Head, Oahu 2/	66	1,304	217
Puako Bay and Pualo Reef, Hawaii	34	1,973	336
Red Hill, Hawaii	29	5,017	184
Kiholo Bay, Hawaii	36	2,091	200
Papawai Bay, Hawaii	34	4,957	449
Other areas:			
Honaunau Bay	28	1,588	167

1/ Survey taken on December 28, 2000, during the open fishing period.

2/ Survey taken on June 25, 2001, during the closed fishing period.

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources, *Statewide Marine Research and Surveys, Survey of Fish and Habitat, July 1, 2000 to June 30, 2001.*

Table 20.09-- MOST ABUNDANT AND HEAVIEST FISH SPECIES AT SPECIFIED LOCATIONS: YEAR ENDING JUNE 30, 2001

[Three leading species at each location, based on both individuals per acre and pounds per acre]

Location and species	Individuals per acre		Pounds per acre	
	Rank	Number	Rank	Number
Hanauma Bay MLCD (inshore):				
Manini (<i>Acanthurus triostegus</i>)	1	958	3	137
Yellow-eye damsel (<i>Eupomacentrus fasciolatus</i>)	2	221	(1/)	(NA)
Aholehole (<i>Kuhlia sandvicensis</i>)	3	203	9	48
Redlipped parrot (<i>Scarus rubroviolaceus</i>)	(1/)	(NA)	1	414
Clown tang (<i>Naso lituratus</i>)	10	78	2	212
Honolua-Mokuleia Bay MLCD:				
Maiii/lavender tang (<i>Acanthurus nigrofuscus</i>)	1	1,416	1	127
Saddle-back wrasse (<i>Thalassoma duperrey</i>)	2	1,325	4	54
Kole (<i>Ctenochaetus strigosus</i>)	3	647	3	92
Clown tang (<i>Naso lituratus</i>)	(1/)	(NA)	2	102
Kealakekua Bay MLCD:				
Kole (<i>Ctenochaetus strigosus</i>)	1	303	6	15
Agile damsel (<i>Chromis agilis</i>)	2	283	3	30
Blackfin damsel (<i>Chromis vanderbilti</i>)	3	277	(1/)	(NA)
Yellow tang (<i>Zebrasoma flavescens</i>)	4	277	1	34
Parrotfishes (Family Scaridae)	(1/)	(NA)	2	33

NA Not available.

MLCD Marine Life Conservation District.

1/ Not in first 10.

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources, *Statewide Marine Research and Surveys, Survey of Fish and Habitat, July 1, 2000 to June 30, 2001.*

Table 20.10-- MINERAL INDUSTRIES (NAICS 21): 1977 TO 2002

[Includes establishments with payroll. Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in Economic Censuses prior to the 1997 Economic Census]

Subject	1977	1982	1987	1992	1997	2002
Number of establishments	7	12	9	7	7	8
With 20 employees or more	2	4	4	4	2	1
All employees:						
Number (1,000) 1/	.1	.2	.2	.2	.1	.1
Annual payroll (million dollars)	1.9	3.8	7.4	9.4	5.6	7.3
Production, development, and exploration workers:						
Number (1,000) 1/	.1	.1	.2	.2	.1	.1
Annual hours (millions)	.2	.2	.4	.4	.2	.2
Annual wages (million dollars)	1.5	2.6	5.7	8.1	4.7	5.1
Value added (million dollars)	8.1	9.7	23.5	27.3	22.0	20.7
Total cost of supplies (million dollars)	2.9	5.9	10.4	11.3	(D)	6.6
Total value of shipments and receipts for services (million dollars)	9.7	12.8	31.1	33.7	33.3	25.6
Capital expenditures (million dollars)	1.3	2.7	2.8	4.8	(D)	1.7

D Withheld to avoid disclosing data for individual companies.

1/ For pay period including March 12.

Source: U.S. Census Bureau, *1987 Census of Mineral Industries, Geographic Area Series, Pacific States*, MIC87-A-9 (October 1990), Hawaii table 1; *1992 Census of Mineral Industries, Geographic Area Series, Pacific States*, MIC92-A-9 (May 1996), Hawaii table 1; *1997 Economic Census, Mining, Geographic Area Series, Hawaii*, EC97N21A-HI (May 2000), table 1; *2002 Economic Census, Mining, Geographic Area Series, Hawaii*, EC02-21A-HI (April 2005), table 1.

Table 20.11-- NONFUEL MINERAL PRODUCTION: 2001 TO 2003

[Production as measured by mine shipments, sales, or marketable production (including consumption by producers), Data are rounded to no more than three significant digits; may not add to totals shown]

Minerals	2001	2002	2003 1/
QUANTITY (1,000 METRIC TONS)			
Cement:			
Masonry	(D)	2/ (D)	-
Portland	112	-	-
Gemstones	(NA)	(NA)	(NA)
Sand and gravel (construction)	534	2/ 610	600
Stone (crushed)	2/ 6,640	2/ 6,380	6,500
VALUE (\$1,000)			
Total	2/ 85,700	2/ 72,300	73,600
Cement:			
Masonry	(D)	(D)	-
Portland	3/ 15,100	-	-
Gemstones	85	109	119
Sand and gravel (construction)	6,270	2/ 7,010	6,900
Stone (crushed)	2/ 64,300	2/ 65,100	66,600

NA Not available.

D Value excluded to avoid disclosing company proprietary data.

1/ Preliminary.

2/ Revised from previous *Data Book* .

3/ Data have been estimated.

Source: U.S. Geological Survey, Minerals Information, "The *Mineral Industry of Hawaii*"

<<http://minerals.er.usgs.gov/minerals/pubs/state/hi.html>> accessed April 27, 2005.