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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, *2012 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: 2012*, Sections 18.

**Table 20.01-- FOREST AND NATURAL AREA ACREAGE, BY ISLAND:
JUNE 30, 2016**

Island	Conservation district forest land		Natural areas	
	Forest reserve land 1/	Private forest land 2/	Number of areas	Acres
State total	652,756	328,742	21	123,810
Hawaii	448,101	106,745	8	94,954
Maui	68,220	53,180	5	18,543
Kahoolawe	-	-	-	-
Lanai	-	6,150	-	-
Molokai	11,690	-	2	2,950
Oahu	38,571	88,817	4	2,148
Kauai	86,174	73,850	2	5,215
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.

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

Table 20.02-- WOODLAND ON FARMS, 2002, 2007 AND 2012, AND BY COUNTY, 2012

[Acres]

Use	2002	2007	2012				
			State total	Hawaii	Honolulu	Kauai	Maui
Total	117,685	79,041	92,734	57,747	(D)	6,972	(D)
Pastured	41,467	22,570	23,766	10,823	(D)	374	(D)
Not pastured	76,218	56,471	68,968	46,924	(D)	6,598	(D)

D Withheld to avoid disclosing data for individual farms.

Source: U.S. Department of Agriculture, *2007 Census of Agriculture, Hawaii*, (February 2009), p. 240.
2012 Census of Agriculture, Hawaii, (February 2014) p. 217.

**Table 20.03-- FOREST AND BRUSHLAND FIRES, BY CAUSE OF FIRE:
2013 TO 2016**

Cause of fire	Number of fires				Acres burned			
	2013	2014	2015 1/	2016	2013	2014	2015 1/	2016
State total	6	8	306	16	782	634	5,594	18,124
Lightning	-	1	-	1	-	2	-	1,787
Campfire	3	-	-	-	3	-	-	-
Smoking	-	-	-	-	-	-	-	-
Debris burning	-	-	1	1	-	-	20	75
Arson	-	-	-	2	-	-	-	5,801
Equipment	-	-	-	2	-	-	-	4,701
Railroads	-	-	-	-	-	-	-	-
Children	-	1	1	-	-	550	-	-
Miscellaneous	3	6	304	10	779	82	5,574	5,760

1/ In 2015, Honolulu Fire Department data was included with the State reporting data.

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

Table 20.04-- COMMERCIAL FISHING: 2003 TO 2016

[Fiscal year ending June 30. Represents the total sea catches of all licensed commercial fishers. Excludes pond catches, the Aquaculture and Development Program, Department of Agriculture, surveys pond harvest market information]

Year	Number of commercial fishermen	Commercial fish catch		
		Pounds landed	Pounds sold	Value to primary producers (dollars)
2003	3,434	24,054,939	(1/)	(1/)
2004	2,971	22,230,489	(1/)	(1/)
2005	3,248	24,876,316	(1/)	(1/)
2006	3,137	24,636,892	(1/)	(1/)
2007	3,220	26,563,127	(1/)	(1/)
2008	3,196	33,310,542	(1/)	(1/)
2009	3,557	28,065,282	(1/)	(1/)
2010	3,373	29,164,222	(1/)	(1/)
2011	3,691	33,032,579	(1/)	(1/)
2012	3,992	31,786,440	(1/)	(1/)
2013	3,970	33,761,150	(1/)	(1/)
2014	3,930	36,237,755	(1/)	(1/)
2015	3,800	36,828,996	(1/)	(1/)
2016	3,805	37,356,054	(1/)	(1/)

1/ 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: 2014 TO 2016

[Fiscal year ending June 30, pounds landed, excludes pond catches. Due to revisions to the commercial fishing report forms in 2002, data may not be comparable to previous years]

Species	2014	2015	2016
Total catch	36,237,755	36,828,996	37,356,054
Tunas	21,109,085	23,166,066	24,596,840
Aku (skipjack)	957,346	615,342	552,955
Tombo	528,047	699,106	656,335
Bigeye (ahi)	15,746,459	18,361,496	19,123,205
Yellowfin (ahi)	3,865,595	3,442,190	4,242,043
Billfishes	6,347,977	5,173,349	4,970,409
Blue marlin	1,521,208	1,436,469	1,349,369
Shortnose spearfish	608,121	540,003	727,588
Striped marlin	1,059,078	1,027,346	1,293,065
Swordfish	3,084,936	2,106,059	1,549,415
Miscellaneous pelagic species	7,075,191	6,805,423	6,163,522
Mahimahi	1,743,944	1,878,826	1,342,183
Monchong	1,320,373	1,369,821	1,190,483
Ono	1,144,577	1,244,753	1,185,412
Opah	2,240,878	1,803,555	1,951,558
Walu	598,857	484,327	476,807
Deep bottom fishes	443,697	471,580	431,234
Ehu	31,456	31,660	31,519
Hapuupuu	10,617	9,121	10,268
Opakapaka	160,834	153,969	137,862
Uku	90,814	112,705	110,817
Ulaula (onaga)	75,813	79,777	62,217
Akule/opelu	531,243	595,211	646,358
Akule	249,196	347,265	419,958
Opelu	263,839	207,691	218,034
Jacks	38,633	36,599	33,359
Inshore fishes	380,879	336,022	299,468
Sharks	124,199	113,408	107,501
Mako	104,447	100,619	98,667
Lobsters	10,128	9,224	5,914
Crabs	42,690	29,191	20,596
Shells	(NA)	(NA)	(NA)
Shrimps	48,691	27,305	27,041
Seaweeds	7,261	5,500	3,528
Unclassified / miscellaneous	78,082	60,118	50,284

NA Not available.

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources, *Commercial Fish Landings, State of Hawaii—Fiscal Years 2014-2016* and records.

Table 20.06-- COMMERCIAL SEA LANDINGS, BY ISLAND: 2014 TO 2016

[Fiscal year ending June 30, pounds landed]

Island	2014	2015	2016
State total	36,237,755	36,828,996	37,356,054
Hawaii	3,060,016	3,165,245	2,533,304
Maui	822,954	893,616	765,185
Lanai	10,031	7,095	8,614
Molokai	44,600	37,727	30,353
Oahu	31,471,367	31,983,066	33,246,769
Kauai and Niihau	828,788	742,247	771,829

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

**Table 20.07-- COMMERCIAL SEA LANDINGS, BY FISHING METHOD:
2014 TO 2016**

[Fiscal year ending June 30, pounds landed]

Fishing method	2014	2015	2016
All methods	36,237,755	36,828,996	37,356,054
Aku pole and line	(1/)	(1/)	(1/)
Longline	28,831,995	30,041,517	31,642,861
Handline	2,243,094	2,109,885	2,022,837
Trolling	3,469,169	3,207,164	2,687,445
Net	478,450	537,716	606,129
Trap	129,249	87,822	65,047
All other methods	1,085,798	844,892	331,735

1/ Due to low level of fishermen reporting and to preserve confidentiality, data for these species are pooled under all other methods.

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources, *Commercial Fish Landings, State of Hawaii--Fiscal Years 2014-2016* and records.

Table 20.08-- MINERAL INDUSTRIES (NAICS 21): 1987 TO 2012

[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	1987	1992	1997	2002	2007	2012
Number of establishments	9	7	7	8	8	7
With 20 employees or more	4	4	2	1	4	1
All employees						
Number (1,000) 1/	0.2	0.2	0.1	0.1	0.2	(2/)
Annual payroll (million dollars)	7.4	9.4	5.6	7.3	9.6	(D)
Production, development, and exploration workers						
Number (1,000) 1/	0.2	0.2	0.1	0.1	0.1	(D)
Annual hours (millions)	0.4	0.4	0.2	0.2	0.3	(D)
Annual wages (million dollars)	5.7	8.1	4.7	5.1	7.9	(D)
Value added (million dollars)	23.5	27.3	22.0	20.7	49.0	(D)
Total cost of supplies (million dollars)	10.4	11.3	(D)	6.6	12.9	(D)
Total value of shipments and receipts for services (million dollars)	31.1	33.7	33.3	25.6	55.4	(D)
Capital expenditures (million dollars)	2.8	4.8	(D)	1.7	6.4	(NA)

D Withheld to avoid disclosing data for individual companies.

NA Not available.

1/ For pay period including March 12.

2/ 100 to 249 employees.

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; 2007 Economic Census, Sector 21: EC0721A2: Mining: Geographic Area Series: Detailed Statistics for the State or Offshore Areas: 2007; 2012 Economic Census, Sector 21: EC1221A2: Mining: Geographic Area Series: Detailed Statistics for the State or Offshore Areas: 2012 <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_21A2&prodType=table> accessed April 6, 2016.

Table 20.09-- NONFUEL MINERAL PRODUCTION: 2011 TO 2013

[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	2011 1/	2012	2013
Quantity (1,000 Metric Tons)			
Gemstones	(NA)	(NA)	(NA)
Sand and gravel (construction)	962	786	679
Stone (crushed)	4,420	4,990	5,180
Value (\$1,000)			
Total	99,900	108,000	103,000
Gemstones	151	151	139
Sand and gravel (construction)	15,100	15,000	12,800
Stone (crushed)	84,700	93,100	89,600

NA Not available.

1/ Revised from previous *Data Book*.

Source: U.S. Geological Survey, Minerals Information, *2012-2013 Minerals Yearbook, Hawaii*

[Advance Release] (July 2016) <https://minerals.usgs.gov/minerals/pubs/state/2012_13/myb2-2012_13-hi.pdf> accessed April 27, 2017.

Table 20.10--CRUSHED STONE SOLD OR USED: 2011 TO 2013

[Due to rounding, components may not add to totals shown]

Type	2011	2012	2013
Number of quarries	(X)	(X)	(X)
Limestone 1/ Traprock	2 16	- 16	- 15
Volcanic cinder and scoria	3	3	2
Miscellaneous stone	6	5	4
Quantity (1,000 Metric Tons)	4,490	4,990	5,180
Limestone 1/ Traprock	23 3,860	- 4,440	- 4,800
Volcanic cinder and scoria	365	212	28
Miscellaneous stone	240	338	350
Value (\$1,000)	86,000	93,100	89,600
Limestone 1/ Traprock	442 77,700	- 85,100	- 83,800
Volcanic cinder and scoria	2,990	1,410	522
Miscellaneous stone	4,880	6,600	5,310
Unit value (Dollars)	2/ 19.18	2/ 18.66	2/ 17.29
Limestone 1/ Traprock	19.33 20.14	- 19.17	- 17.44
Volcanic cinder and scoria	8.19	6.67	18.64
Miscellaneous stone	20.35	19.51	15.17

X Not applicable.

1/ Includes limestone-dolomite reported with no distinction between the two kinds of stone.

2/ Average.

Source: U.S. Geological Survey, Minerals Information, *2010-2011 Minerals Yearbook, Hawaii [Advance Release]* (April 2015) <<http://minerals.er.usgs.gov/minerals/pubs/state/hi.html>> accessed April 17, 2015 and *2012-2013 Minerals Yearbook, Hawaii [Advance Release]* (July 2016) <https://minerals.usgs.gov/minerals/pubs/state/2012_13/myb2-2012_13-hi.pdf> accessed April 27, 2017.