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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, 2018**

Island	Conservation district forest land		Natural areas	
	Forest reserve land 1/	Private forest land 2/	Number of areas	Acres
State total	658,110	249,516	21	123,810
Hawaii	453,242	91,784	8	94,954
Maui	67,761	90,681	5	18,543
Kahoolawe	-	-	-	-
Lanai	-	6,950	-	-
Molokai	11,690	-	2	2,950
Oahu	39,243	20,213	4	2,148
Kauai	86,174	39,888	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. In 2018, alien forest classification not included thus might not be comparable to previous years.

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

Table 20.02-- WOODLAND ON FARMS, 2007, 2012 AND 2017, AND BY COUNTY, 2017

[Acres]

Use	2007	2012	2017				
			State total	Hawaii	Honolulu	Kauai	Maui
Total	79,041	92,734	88,813	55,880	6,750	8,306	17,877
Pastured	22,570	23,766	18,797	12,290	2,257	404	3,846
Not pastured	56,471	68,968	70,016	43,590	4,493	7,902	14,031

Source: U.S. Department of Agriculture, *2007 Census of Agriculture, Hawaii*, (February 2009), p. 240. *2012 Census of Agriculture, Hawaii*, (February 2014) p. 217. *2017 Census of Agriculture, Hawaii*, (April 2019) p. 229.

**Table 20.03-- FOREST AND BRUSHLAND FIRES, BY CAUSE OF FIRE:
2015 TO 2018**

Cause of fire	Number of fires				Acres burned			
	2015 1/	2016	2017 2/	2018	2015 1/	2016	2017 2/	2018
State total	306	16	524	13	5,594	18,124	7,697	30,593
Lightning	-	1	2	2	-	1,787	2	817
Campfire	-	-	1	-	-	-	1	-
Smoking	-	-	-	-	-	-	-	-
Debris burning	1	1	2	-	20	75	2,950	-
Arson	-	2	1	-	-	5,801	11	-
Equipment	-	2	2	1	-	4,701	560	3,760
Railroads	-	-	-	-	-	-	-	-
Children	1	-	-	-	-	-	-	-
Miscellaneous	304	10	516	10	5,574	5,760	4,173	26,016

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

2/ In 2017, data from the counties 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 2018

[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/)
2017	3,714	36,152,719	(1/)	(1/)
2018	3,561	37,430,130	(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: 2016 TO 2018

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

Species	2016	2017	2018
Total catch	37,356,054	36,152,719	37,430,130
Tunas	24,596,840	23,701,646	25,632,123
Aku (skipjack)	552,955	725,108	554,869
Tombo	656,335	311,781	169,961
Bigeye (ahi)	19,123,205	16,866,477	16,406,735
Yellowfin (ahi)	4,242,043	5,786,360	8,488,051
Billfishes	4,970,409	5,907,222	5,340,160
Blue marlin	1,349,369	1,662,184	1,879,920
Shortnose spearfish	727,588	731,200	582,026
Striped marlin	1,293,065	835,502	1,039,911
Swordfish	1,549,415	2,634,648	1,791,548
Miscellaneous pelagic species	6,163,522	5,171,189	5,196,681
Mahimahi	1,342,183	1,002,334	1,032,345
Monchong	1,190,483	918,855	882,465
Ono	1,185,412	905,596	1,109,510
Opah	1,951,558	1,978,256	1,860,202
Walu	476,807	360,052	304,843
Deep bottom fishes	431,234	412,615	393,503
Ehu	31,519	25,708	21,750
Hapuupuu	10,268	8,300	9,518
Opakapaka	137,862	135,116	118,897
Uku	110,817	118,544	102,910
Ulaula (onaga)	62,217	47,132	66,215
Akule/opelu	646,358	477,071	403,577
Akule	419,958	331,287	268,902
Opelu	218,034	118,622	134,653
Jacks	33,359	38,486	43,315
Inshore fishes	299,468	234,964	253,016
Sharks	107,501	137,253	103,125
Mako	98,667	122,444	91,972
Lobsters	5,914	3,885	5,903
Crabs	20,596	20,486	15,570
Shells	(NA)	(NA)	(NA)
Shrimps	27,041	(1/)	3,525
Seaweeds	3,528	5,244	5,011
Unclassified / miscellaneous	50,284	2/ 42,658	34,622

NA Not available.

1/ Withheld due to low level of fishermen reporting and to preserve confidentiality.

2/ Revised from previous *Data Book*.

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources, *Commercial Fish Landings, State of Hawaii--Fiscal Years 2016-2018* and records.

Table 20.06-- COMMERCIAL SEA LANDINGS, BY ISLAND: 2016 TO 2018

[Fiscal year ending June 30, pounds landed]

Island	2016	2017	2018
State total	37,356,054	36,152,719	37,430,130
Hawaii	2,533,304	1,930,624	2,379,532
Maui	765,185	648,428	639,788
Lanai	8,614	8,719	10,600
Molokai	30,353	21,389	21,343
Oahu	33,246,769	32,956,903	33,678,905
Kauai and Niihau	771,829	586,656	699,962

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

**Table 20.07-- COMMERCIAL SEA LANDINGS, BY FISHING METHOD:
2016 TO 2018**

[Fiscal year ending June 30, pounds landed]

Fishing method	2016	2017	2018
All methods	37,356,054	36,152,719	37,430,130
Aku pole and line	(1/)	(1/)	(1/)
Longline	31,642,861	31,398,569	32,440,377
Handline	2,022,837	1,685,893	1,896,525
Trolling	2,687,445	2,331,685	2,445,736
Net	606,129	480,575	358,816
Trap	65,047	42,006	38,118
All other methods	331,735	213,992	250,558

1/ Due to low level of fishermen reporting and to preserve confidentiality, data for these methods 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 2016-2018* 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: 2013 TO 2015

[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	2013 1/	2014 1/	2015
Quantity (1,000 metric tons)			
Gemstones	(NA)	(NA)	(NA)
Sand and gravel (construction)	662	492	459
Stone (crushed)	5,420	4,500	4,460
Value (\$1,000)			
Total	103,000	96,200	98,400
Gemstones	139	136	103
Sand and gravel (construction)	10,100	7,830	10,300
Stone (crushed)	92,300	88,200	88,000

NA Not available.

1/ Revised from previous *Data Book*.

Source: U.S. Geological Survey, *2015 Minerals Yearbook, Statistical Summary [Advance Release]* (March 2019) <<https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/atoms/files/myb1-2015-stati.pdf>> accessed May 22, 2019.

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/	2	-	-
Traprock	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/	23	-	-
Traprock	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/	442	-	-
Traprock	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	18.66	17.29
Limestone 1/	19.33	-	-
Traprock	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.