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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's *2017 Economic Census*, U.S. Census Bureau *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.

**Table 20.01-- FOREST AND NATURAL AREA ACREAGE, BY ISLAND:  
JUNE 30, 2021**

Island	Conservation district forest land		Natural areas	
	Forest reserve land 1/	Private forest land 2/	Number of areas	Acres
State total	683,964	193,695	21	123,810
Hawaii	479,097	96,877	8	94,954
Maui	67,761	30,153	5	18,543
Kahoolawe	-	-	-	-
Lanai	-	6,950	-	-
Molokai	11,690	-	2	2,950
Oahu	39,242	19,831	4	2,148
Kauai	86,174	39,884	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. The alien forest classification was excluded starting in 2018. Maui Island removed the alien forest classification in 2020. Therefore, data after 2018 may not be comparable to previous years.

Source: Hawaii State Department of Land and Natural Resources, Division of Forestry and Wildlife 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 <<https://www.nass.usda.gov/Publications/AgCensus/2017/index.php>> accessed April 27, 2020.

**Table 20.03-- FOREST AND BRUSHLAND FIRES, BY CAUSE OF FIRE:  
2018 TO 2021**

Cause of fire	Number of fires				Acres burned			
	2018	2019	2020	2021	2018	2019	2020	2021
State total	13	31	7	13	30,593	32,124	5,275	46,045
Lightning	2	-	-	1	817	-	-	0.1
Campfire	-	1	2	2	-	228	4,303	5
Smoking	-	-	-	1	-	-	-	250
Debris burning	-	-	-	-	-	-	-	-
Arson	-	-	-	-	-	-	-	-
Equipment	1	1	-	1	3,760	9,805	-	43,026
Railroads	-	-	-	-	-	-	-	-
Children	-	-	-	-	-	-	-	-
Miscellaneous	10	29	5	8	26,016	22,091	972	2,763

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

**Table 20.04-- COMMERCIAL FISHING: 2003 TO 2021**

[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	36,233,907	(1/)	(1/)
2018	3,561	37,490,697	(1/)	(1/)
2019	3,484	34,593,443	(1/)	(1/)
2020	3,135	30,451,624	(1/)	(1/)
2021	3,143	29,098,958	(1/)	(1/)

1/ Information is collected from a fish-dealer reporting system. Only total landings reported by commercial fishers is available.

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: 2018 TO 2021**

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

Species	2018	2019	2020	2021
Total catch	37,490,697	34,593,443	30,451,624	29,098,958
Tunas	25,647,509	23,059,305	21,576,468	21,840,680
Aku (Skipjack)	549,703	676,427	651,490	624,206
Tombo	170,852	268,477	227,510	205,066
Bigeye (Ahi)	16,406,473	16,271,503	15,977,921	15,047,214
Yellowfin (Ahi)	8,508,046	5,831,575	4,707,680	5,958,349
Billfishes	5,344,304	4,990,240	4,043,725	3,455,757
Blue marlin	1,883,522	1,994,198	1,881,405	1,184,293
Shortnose spearfish	582,294	495,576	312,941	289,288
Striped marlin	1,040,227	1,122,006	997,903	656,421
Swordfish	1,791,450	1,346,441	803,646	1,301,077
Miscellaneous pelagic species	5,203,779	5,419,312	3,821,069	2,856,407
Mahimahi	1,037,393	1,026,220	685,922	678,482
Monchong	883,216	751,599	563,143	419,259
Ono	1,110,822	1,341,966	1,071,162	1,015,087
Opah	1,860,144	2,009,458	1,267,425	609,683
Walu	304,877	282,834	229,065	130,463
Deep bottom fishes	397,361	300,607	270,808	272,729
Ehu	21,830	23,051	26,576	28,418
Hapuupuu	9,518	5,762	6,572	4,045
Opakapaka	119,326	70,069	63,886	57,160
Uku	104,072	80,907	63,419	54,655
Ulaula (Onaga)	66,458	58,700	42,840	43,255
Akule/Opelu	419,179	384,974	343,251	356,128
Akule	266,614	268,127	235,683	278,445
Opelu	141,242	111,113	104,958	71,841
Jacks	43,622	29,154	21,601	20,261
Inshore fishes	266,161	236,141	240,303	238,994
Sharks	103,506	105,711	62,909	4,989
Mako	91,978	95,770	55,458	1,656
Lobsters	5,916	5,324	4,608	2,308
Crabs	16,151	17,576	25,934	11,591
Shells	(NA)	(NA)	(NA)	(NA)
Shrimps	3,582	16,031	8,526	(1/)
Seaweeds	5,011	3,220	2,613	1,059
Unclassified / miscellaneous	34,471	25,828	28,668	38,053

NA Not available.

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

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

**Table 20.06-- COMMERCIAL SEA LANDINGS, BY ISLAND: 2018 TO 2021**

[Fiscal year ending June 30. Measured in pounds landed]

<b>Island</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
State total	37,490,697	34,593,443	30,451,624	29,098,958
Hawaii	2,409,755	2,261,854	1,735,744	1,782,864
Maui	649,368	622,906	477,164	386,085
Lanai	10,558	9,912	5,432	5,849
Molokai	21,553	19,387	10,171	11,281
Oahu	33,697,434	31,028,880	27,610,130	26,428,907
Kauai and Niihau	702,029	650,505	612,983	483,972

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



**Table 20.07-- COMMERCIAL SEA LANDINGS, BY FISHING METHOD:  
2018 TO 2021**

[Fiscal year ending June 30. Measured in pounds landed]

<b>Fishing method</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
All methods	37,490,697	34,593,443	30,451,624	29,098,958
Aku pole and line	(1/)	(1/)	(1/)	(1/)
Longline	32,440,745	29,676,689	26,449,143	25,380,601
Handline	1,918,131	1,678,717	1,442,885	1,526,351
Trolling	2,460,145	2,638,684	1,982,956	1,593,678
Net	375,805	319,026	303,846	366,733
Trap	39,927	43,671	42,581	32,954
All other methods	255,943	236,656	230,214	198,641

1/ Due to low level of fishermen reporting and to preserve confidentiality, data are combined with "All other methods."

Source: Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources records and calculations by the Department of Business, Economic Development & Tourism.

**Table 20.08-- MINERAL INDUSTRIES (NAICS 21): 1992 TO 2017**

[Includes establishments with payroll. Statistics in 1992 are based on the Standard Industrial Classification (SIC) system used in the Economic Census. Statistics in 1997 and on are based on the North American Industry Classification System (NAICS) which replaced the SIC system]

Subject	1992	1997	2002	2007	2012	2017
Number of establishments	7	7	8	8	7	(D)
With 20 employees or more	4	2	1	4	1	(D)
All employees						
Number (1,000) 1/	0.2	0.1	0.1	0.2	(2/)	(2/)
Annual payroll (million dollars)	9.4	5.6	7.3	9.6	(D)	(D)
Production, development, and exploration workers						
Number (1,000) 1/	0.2	0.1	0.1	0.1	(D)	(D)
Annual hours (millions)	0.4	0.2	0.2	0.3	(D)	(D)
Annual wages (million dollars)	8.1	4.7	5.1	7.9	(D)	(D)
Value added (million dollars)	27.3	22.0	20.7	49.0	(D)	(D)
Total cost of supplies (million dollars)	11.3	(D)	6.6	12.9	(D)	(D)
Total value of shipments and receipts for services (million dollars)	33.7	33.3	25.6	55.4	(D)	(D)
Capital expenditures (million dollars)	4.8	(D)	1.7	6.4	(NA)	(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, *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*; 2017 Economic Census, Table ECNTYPE2017 <<https://data.census.gov/>> accessed October 21, 2020.

**Table 20.09-- NONFUEL MINERAL PRODUCTION: 2015 TO 2018**

[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]

<b>Minerals</b>	<b>2015 1/</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Quantity (1,000 metric tons)				
Gemstones	(NA)	(NA)	(NA)	(NA)
Sand and gravel (construction)	459	357	449	378
Stone (crushed)	5,150	5,260	5,070	4,680
Value (\$1,000)				
Total	112,000	113,000	120,000	(NA)
Gemstones	103	69	12	(NA)
Sand and gravel (construction)	10,300	7,720	9,170	7,630
Stone (crushed)	101,000	105,000	111,000	107,000

NA Not available.

Source: U.S. Geological Survey, *2017 Minerals Yearbook*, Statistical Summary [Table-Release only] (May 2021) <<https://www.usgs.gov/centers/nmic/statistical-summary>> accessed June 21, 2022; and USGS, *Aggregates Time Series Data by State, Type, and End Use* (April 2021) <<https://www.usgs.gov/media/files/usgs-aggregates-time-series-data-state-type-and-end-use>> accessed June 9, 2022.

**Table 20.10--CRUSHED STONE SOLD OR USED: 2015 TO 2018**

[Quantity, value, and unit value totals are a result of calculations based on all crushed stone sold or used in the State. Components may not add to total because of rounding]

Type	2015 1/	2016	2017	2018
Quantity (1,000 metric tons)	5,150	5,260	5,070	4,680
Traprock	4,760	4,780	4,600	4,210
Volcanic cinder and scoria	32	35	44	39
Miscellaneous stone	356	443	425	429
Value (\$1,000)	101,000	105,000	111,000	107,000
Traprock	93,800	95,800	101,000	97,400
Volcanic cinder and scoria	628	676	932	840
Miscellaneous stone	6,810	8,490	8,500	8,530
Unit value (dollars)	19.66	19.95	21.83	22.81
Traprock	19.71	20.03	22.00	23.12
Volcanic cinder and scoria	19.63	19.48	21.26	21.83
Miscellaneous stone	19.13	19.17	20.02	19.89

1/ Revised from previous *Data Book*.

Source: USGS, *Aggregates Time Series Data by State, Type, and End Use* (April 2021)

<<https://www.usgs.gov/media/files/usgs-aggregates-time-series-data-state-type-and-end-use>> accessed June 9, 2022.