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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, 2023**

Island	Conservation district forest land		Natural areas	
	Forest reserve land 1/	Private forest land 2/	Number of areas	Acres
State total	670,295	227,479	23	127,578
Hawaii	457,987	100,800	9	97,232
Maui	68,118	30,099	5	19,653
Kahoolawe	-	-	-	-
Lanai	-	6,952	-	-
Molokai	12,327	23,573	2	3,003
Oahu	45,518	26,168	5	2,514
Kauai	86,345	39,887	2	5,176
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 2012, 2017, 2022, AND BY COUNTY, 2022

[Acres]

Use	2012	2017	2022				
			State total	Hawaii	Honolulu	Kauai	Maui
Total	92,734	88,813	87,099	51,717	4,587	7,721	23,074
Pastured	23,766	18,797	17,857	11,278	2,014	90	4,475
Not pastured	68,968	70,016	69,242	40,439	2,573	7,631	18,599

Source: U.S. Department of Agriculture, *2017 Census of Agriculture, Hawaii*, (April 2019) p. 229. *2022 Census of Agriculture, Hawaii*, (February 2024) p. 233 <<https://www.nass.usda.gov/AgCensus/>> accessed April 23, 2024.

**Table 20.03-- FOREST AND BRUSHLAND FIRES, BY CAUSE OF FIRE:
2020 TO 2023**

[Components may not sum to total due to rounding]

Cause of fire	Number of fires				Acres burned			
	2020	2021	2022	2023	2020	2021	2022	2023
State total	7	13	19	14	5,275	46,045	19,533	6,037
Lightning	-	1	1	1	-	(2/)	1	1,500
Campfire	2	2	2	-	4,303	5	3	-
Smoking	-	1	-	-	-	250	-	-
Debris burning	-	-	1	1	-	-	(2/)	30
Arson	-	-	2	-	-	-	(2/)	-
Equipment	-	1	2	2	-	43,026	16,802	2,882
Railroads	-	-	-	-	-	-	-	-
Children	-	-	-	-	-	-	-	-
Miscellaneous	5	8	11	10	972	2,763	2,728	1,625

1/ Components may not sum to total due to rounding.

2/ Rounds down to zero.

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 2023

[Fiscal year ending June 30. Represents the total sea catches of all licensed commercial fishermen. Excludes pond catches. The Aquaculture and Development Program, Department of Agriculture, surveys pond-harvest market information. Information is collected from a fish-dealer reporting system. Only total pounds landed reported by commercial fishermen is available]

Year	Number of commercial fishermen	Pounds landed of commercial fish
2003	3,310	24,758,321
2004	3,244	23,301,663
2005	3,062	30,580,972
2006	3,187	28,904,852
2007	3,090	29,529,632
2008	3,177	34,503,241
2009	3,179	28,961,235
2010	3,486	29,791,203
2011	3,337	32,418,627
2012	3,662	1/ 31,179,051
2013	3,972	32,518,856
2014	3,921	34,736,450
2015	3,885	37,048,277
2016	3,759	1/ 37,531,011
2017	3,720	1/ 36,246,690
2018	3,685	37,499,036
2019	3,500	34,594,544
2020	3,429	30,460,726
2021	3,146	1/ 29,109,892
2022	3,175	1/ 28,644,729
2023	3,206	28,819,394

1/ Revised from previous *Data Book*.

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: 2020 TO 2023

[Fiscal year ending June 30. Measured in pounds landed, excludes pond catches. Data from 2020 to 2022 are revised from previous *Data Book*]

Species	2020	2021	2022	2023
Total catch	29,383,507	29,109,892	28,644,729	28,819,394
Tunas	21,997,883	21,849,994	21,540,700	21,151,826
Aku (Skipjack)	679,533	624,287	412,284	397,517
Tombo	211,824	205,066	415,454	355,219
Bigeye (Ahi)	15,099,318	15,053,213	14,388,688	13,499,302
Yellowfin (Ahi)	5,998,820	5,961,583	6,317,876	6,892,483
Billfishes	3,617,346	3,456,168	3,695,228	4,244,612
Blue marlin	1,330,888	1,184,744	1,210,062	1,181,232
Shortnose spearfish	288,137	289,288	278,138	364,541
Striped marlin	670,242	656,221	523,288	668,021
Swordfish	1,303,025	1,301,237	1,649,654	1,996,824
Miscellaneous pelagic species	(NA)	2,856,646	2,513,473	2,422,135
Mahimahi	706,607	678,660	679,672	843,325
Monchong	419,981	419,259	397,207	365,477
Ono	944,607	1,015,147	858,262	739,583
Opah	609,598	609,683	406,864	326,127
Walu	130,224	130,463	167,206	146,106
Deep bottom fishes	203,660	272,729	297,003	337,542
Ehu	26,643	28,418	30,588	27,561
Hapuupuu	6,582	4,045	4,193	3,680
Opakapaka	63,964	57,160	81,950	98,684
Uku	63,431	54,655	55,572	52,762
Ulaula (Onaga)	43,040	43,255	47,687	48,222
Akule/Opelu	343,467	357,070	326,612	334,307
Akule	235,683	279,387	231,854	261,659
Opelu	105,174	71,841	85,216	63,495
Jacks	21,606	20,260	14,834	20,526
Inshore fishes	240,097	238,999	197,769	235,057
Sharks	5,533	4,989	5,290	4,381
Mako	1,856	1,656	2,540	736
Lobsters	4,611	2,308	1,862	1,931
Crabs	25,934	11,591	18,247	22,624
Shells	(NA)	(NA)	(NA)	(NA)
Shrimps	8,526	(1/)	3,741	22,027
Seaweeds	2,654	1,137	2,500	2,390
Unclassified / miscellaneous	(NA)	38,001	27,470	20,035

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: 2020 TO 2023

[Fiscal year ending June 30. Measured in pounds landed. Data from 2020 to 2022 are revised from previous *Data Book*]

Island	2020	2021	2022	2023
State total	29,383,507	29,109,892	28,644,729	28,819,394
Hawaii	1,719,197	1,792,760	1,879,441	1,901,254
Maui	477,569	386,230	473,823	467,072
Lanai	5,432	5,849	5,937	5,695
Molokai	10,171	11,281	14,708	33,914
Oahu	26,557,521	26,429,801	25,713,498	25,857,518
Kauai and Niihau	613,618	483,972	557,322	553,941

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

**Table 20.07-- COMMERCIAL SEA LANDINGS, BY FISHING METHOD:
2020 TO 2023**

[Fiscal year ending June 30. Measured in pounds landed. Data from 2020 to 2022 are revised from previous *Data Book*]

Fishing method	2020	2021	2022	2023
All methods	29,383,507	29,109,892	28,644,729	28,819,394
Aku pole and line	(1/)	(1/)	(1/)	(1/)
Longline	25,380,601	25,380,601	24,597,315	24,632,387
Handline	1,442,502	1,532,865	1,643,473	1,947,823
Trolling	1,982,401	1,595,467	1,886,159	1,621,064
Net	303,846	367,908	311,716	360,891
Trap	42,581	32,954	36,109	53,062
All other methods	231,576	200,098	169,958	204,167

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.

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 2022

[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	2015	2016	2017	2018	2019	2020	2021	2022
Quantity (1,000 metric tons)								
Gemstones	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Sand and gravel, construction	459	357	1/ 173	1/ 120	131	112	158	293
Stone, crushed	5,150	5,260	5,070	4,680	5,770	5,880	5,850	5,570
Value (\$1,000)								
Total	111,403	112,789	116,352	111,050	128,753	143,999	143,052	152,500
Gemstones	103	69	12	12	12	(NA)	(NA)	(NA)
Sand and gravel, construction	10,300	7,720	1/ 5,340	1/ 4,050	4,650	2,930	4,040	9,500
Stone, crushed	101,000	105,000	111,000	107,000	124,000	141,000	139,000	143,000

NA Not available.

1/ Revised from previous *Data Book*.

Source: U.S. Geological Survey, *2019 Minerals Yearbook*, Statistical Summary [Table-Release only] (April 2023) <<https://www.usgs.gov/centers/nmic/statistical-summary>> accessed June 17, 2024; and USGS, *Aggregates Time Series Data by State, Type, and End Use* (April 2024) <<https://www.usgs.gov/media/files/usgs-aggregates-time-series-data-state-type-and-end-use>> accessed May 23, 2024.

Table 20.10--CRUSHED STONE SOLD OR USED: 2015 TO 2022

[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	2016	2017	2018	2019	2020	2021	2022
Quantity (1,000 metric tons)	5,150	5,260	5,070	4,680	5,770	5,880	5,850	5,570
Traprock	4,760	4,780	4,600	4,210	5,470	5,370	5,460	5,160
Volcanic cinder and scoria	32	35	44	39	28	23	108	98
Miscellaneous stone	356	443	425	429	275	401	281	315
Value (\$1,000)	101,000	105,000	111,000	107,000	124,000	141,000	139,000	143,000
Traprock	93,800	95,800	101,000	97,400	117,000	128,000	128,000	131,000
Volcanic cinder and scoria	628	676	932	840	650	614	2,920	2,560
Miscellaneous stone	6,810	8,490	8,500	8,530	6,450	10,900	7,640	9,420
Unit value (dollars)	19.66	19.95	21.83	22.81	21.50	24.01	23.76	25.59
Traprock	19.71	20.03	22.00	23.12	21.39	23.82	23.52	25.31
Volcanic cinder and scoria	19.63	19.48	21.26	21.83	23.15	27.12	27.06	26.27
Miscellaneous stone	19.13	19.17	20.02	19.89	23.42	27.05	27.21	29.89

Source: USGS, *Aggregates Time Series Data by State, Type, and End Use* (April 2024)

<<https://www.usgs.gov/media/files/usgs-aggregates-time-series-data-state-type-and-end-use>> accessed May 23, 2024.