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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, 2014**

| Island | Conservation district forest land | | Natural areas | |
|-------------|-----------------------------------|------------------------|-----------------|---------|
| | Forest reserve land 1/ | Private forest land 2/ | Number of areas | Acres |
| State total | 649,667 | 328,742 | 20 | 123,810 |
| Hawaii | 446,766 | 106,745 | 8 | 94,954 |
| Maui | 68,220 | 53,180 | 5 | 18,543 |
| Kahoolawe | - | - | - | - |
| Lanai | - | 6,150 | - | - |
| Molokai | 11,690 | - | 2 | 2,950 |
| Oahu | 36,817 | 88,817 | 3 | 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, 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:
2012 TO 2014**

| Cause of fire | Number of fires | | | Acres burned | | |
|----------------|-----------------|------|------|--------------|------|------|
| | 2012 | 2013 | 2014 | 2012 | 2013 | 2014 |
| State total | 12 | 6 | 8 | 5,526 | 782 | 634 |
| Lightning | - | - | 1 | - | - | 2 |
| Campfire | - | 3 | - | - | 3 | - |
| Smoking | - | - | - | - | - | - |
| Debris burning | - | - | - | - | - | - |
| Arson | - | - | - | - | - | - |
| Equipment | - | - | - | - | - | - |
| Railroads | - | - | - | - | - | - |
| Children | - | - | 1 | - | - | 550 |
| Miscellaneous | 12 | 3 | 6 | 5,526 | 779 | 82 |

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 2014

[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 | 2/ 33,761,150 | (1/) | (1/) |
| 2014 | 3,930 | 36,237,755 | (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.

2/ 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: 2012 TO 2014

[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 | 2012 | 2013 1/ | 2014 |
|-------------------------------|------------|------------|------------|
| Total catch | 31,786,440 | 33,761,150 | 36,237,755 |
| Tunas | 19,516,556 | 21,584,628 | 21,109,085 |
| Aku (skipjack) | 983,209 | 1,216,613 | 957,346 |
| Tombo | 1,706,993 | 1,681,901 | 528,047 |
| Bigeye (ahi) | 12,799,914 | 14,574,067 | 15,746,459 |
| Yellowfin (ahi) | 4,018,234 | 4,098,369 | 3,865,595 |
| Billfishes | 4,866,636 | 4,351,833 | 6,347,977 |
| Blue marlin | 1,169,396 | 1,106,797 | 1,521,208 |
| Shortnose spearfish | 425,419 | 401,949 | 608,121 |
| Striped marlin | 751,233 | 679,744 | 1,059,078 |
| Swordfish | 2,481,161 | 2,121,898 | 3,084,936 |
| Miscellaneous pelagic species | 5,663,040 | 6,052,506 | 7,075,191 |
| Mahimahi | 1,803,548 | 1,739,974 | 1,743,944 |
| Monchong | 674,275 | 959,152 | 1,320,373 |
| Ono | 734,730 | 860,507 | 1,144,577 |
| Opah | 1,787,878 | 1,824,841 | 2,240,878 |
| Walu | 621,588 | 647,528 | 598,857 |
| Deep bottom fishes | 364,686 | 423,551 | 443,697 |
| Ehu | 25,848 | 29,991 | 31,456 |
| Hapuupuu | 9,224 | 10,517 | 10,617 |
| Opakapaka | 105,336 | 95,929 | 160,834 |
| Uku | 101,810 | 138,833 | 90,814 |
| Ulaula (onaga) | 52,738 | 66,886 | 75,813 |
| Akule/opelu | 554,485 | 517,012 | 531,243 |
| Akule | 260,118 | 253,395 | 249,196 |
| Opelu | 257,251 | 252,269 | 263,839 |
| Jacks | 53,582 | 43,927 | 38,633 |
| Inshore fishes | 414,431 | 430,315 | 380,879 |
| Sharks | 217,666 | 192,359 | 124,199 |
| Mako | 135,970 | 136,469 | 104,447 |
| Lobsters | 10,524 | 11,083 | 10,128 |
| Crabs | 23,153 | 46,190 | 42,690 |
| Shells | (NA) | (NA) | (NA) |
| Shrimps | 7,141 | 12,972 | 48,691 |
| Seaweeds | 17,626 | 25,122 | 7,261 |
| Unclassified / miscellaneous | 76,914 | 69,652 | 78,082 |

NA Not available.

1/ 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 2012-2014* and records.

Table 20.06-- COMMERCIAL SEA LANDINGS, BY ISLAND: 2012 TO 2014

[Fiscal year ending June 30, pounds landed]

| Island | 2012 | 2013 1/ | 2014 |
|------------------|-------------|----------------|-------------|
| State total | 31,786,440 | 33,761,150 | 36,237,755 |
| Hawaii | 2,685,704 | 3,256,457 | 3,060,016 |
| Maui | 874,622 | 813,774 | 822,954 |
| Lanai | 7,851 | 6,418 | 10,031 |
| Molokai | 42,757 | 44,380 | 44,600 |
| Oahu | 27,339,527 | 28,668,562 | 31,471,367 |
| Kauai and Niihau | 835,979 | 971,558 | 828,788 |

1/ Revised from previous *Data Book*.

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

**Table 20.07-- COMMERCIAL SEA LANDINGS, BY FISHING METHOD:
2012 TO 2014**

[Fiscal year ending June 30, pounds landed]

| Fishing method | 2012 | 2013 1/ | 2014 |
|-----------------------|-------------|----------------|-------------|
| All methods | 31,786,440 | 33,761,150 | 36,237,755 |
| Aku pole and line | 369,116 | (2/) | (2/) |
| Longline | 24,558,662 | 25,903,228 | 28,831,995 |
| Handline | 2,211,202 | 2,928,340 | 2,243,094 |
| Trolling | 3,390,318 | 3,374,156 | 3,469,169 |
| Net | 483,258 | 434,754 | 478,450 |
| Trap | 40,461 | 93,608 | 129,249 |
| All other methods | 733,423 | 1,027,065 | 1,085,798 |

1/ Revised from previous *Data Book*.

2/ 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 2012-2014* and records.

Table 20.08-- MINERAL INDUSTRIES (NAICS 21): 1982 TO 2007

[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 | 1982 | 1987 | 1992 | 1997 | 2002 | 2007 |
|--|------|------|------|------|------|------|
| Number of establishments | 12 | 9 | 7 | 7 | 8 | 8 |
| With 20 employees or more | 4 | 4 | 4 | 2 | 1 | 4 |
| All employees | | | | | | |
| Number (1,000) 1/ | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 |
| Annual payroll (million dollars) | 3.8 | 7.4 | 9.4 | 5.6 | 7.3 | 9.6 |
| Production, development, and exploration workers | | | | | | |
| Number (1,000) 1/ | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| Annual hours (millions) | 0.2 | 0.4 | 0.4 | 0.2 | 0.2 | 0.3 |
| Annual wages (million dollars) | 2.6 | 5.7 | 8.1 | 4.7 | 5.1 | 7.9 |
| Value added (million dollars) | 9.7 | 23.5 | 27.3 | 22.0 | 20.7 | 49.0 |
| Total cost of supplies (million dollars) | 5.9 | 10.4 | 11.3 | (D) | 6.6 | 12.9 |
| Total value of shipments and receipts for services (million dollars) | 12.8 | 31.1 | 33.7 | 33.3 | 25.6 | 55.4 |
| Capital expenditures (million dollars) | 2.7 | 2.8 | 4.8 | (D) | 1.7 | 6.4 |

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; 2007 Economic Census, Sector 21: EC0721A2: Mining: Geographic Area Series: Detailed Statistics for the State or Offshore Areas: 2007 <http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=04000US15&-fds_name=EC0700A1&-ds_name=EC0721A2&-_lang=en> accessed May 26, 2010.

Table 20.09-- NONFUEL MINERAL PRODUCTION: 2009 TO 2011

[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 | 2009 1/ | 2010 | 2011 |
|--------------------------------|----------------|-------------|-------------|
| Quantity (1,000 Metric Tons) | | | |
| Gemstones | (NA) | (NA) | (NA) |
| Sand and gravel (construction) | 1,180 | 1,020 | 962 |
| Stone (crushed) | 5,800 | 4,740 | 4,490 |
| Value (\$1,000) | | | |
| Total | 116,000 | 108,000 | 101,000 |
| Gemstones | 151 | 151 | 151 |
| Sand and gravel (construction) | 15,000 | 15,500 | 15,100 |
| Stone (crushed) | 101,000 | 91,900 | 86,000 |

NA Not available.

1/ Revised from previous *Data Book*.

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.

Table 20.10--CRUSHED STONE SOLD OR USED: 2009 TO 2011

[Data are rounded to no more than three significant digits;
except in unit value; may not add to totals shown]

| Type | 2009 | 2010 | 2011 |
|------------------------------|---------|--------|--------|
| Number of quarries | (X) | (X) | (X) |
| Limestone 1/ | - | 2 | 2 |
| Traprock | 19 | 16 | 16 |
| Volcanic cinder and scoria | 3 | 2 | 3 |
| Miscellaneous stone | 8 | 5 | 6 |
| Quantity (1,000 Metric Tons) | 5,800 | 4,740 | 4,490 |
| Limestone 1/ | - | 66 | 23 |
| Traprock | 5,050 | 4,180 | 3,860 |
| Volcanic cinder and scoria | 121 | 103 | 365 |
| Miscellaneous stone | 623 | 397 | 240 |
| Value (\$1,000) | 101,000 | 91,900 | 86,000 |
| Limestone 1/ | - | 1,130 | 442 |
| Traprock | 87,600 | 81,000 | 77,700 |
| Volcanic cinder and scoria | 1,540 | 1,760 | 2,990 |
| Miscellaneous stone | 11,500 | 8,080 | 4,880 |
| Unit value | 17.41 | 19.39 | 19.18 |
| Limestone 1/ | - | 17.08 | 19.33 |
| Traprock | 17.35 | 19.39 | 20.14 |
| Volcanic cinder and scoria | 12.74 | 17.08 | 8.19 |
| Miscellaneous stone | 18.46 | 20.36 | 20.35 |

X Not applicable.

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

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.