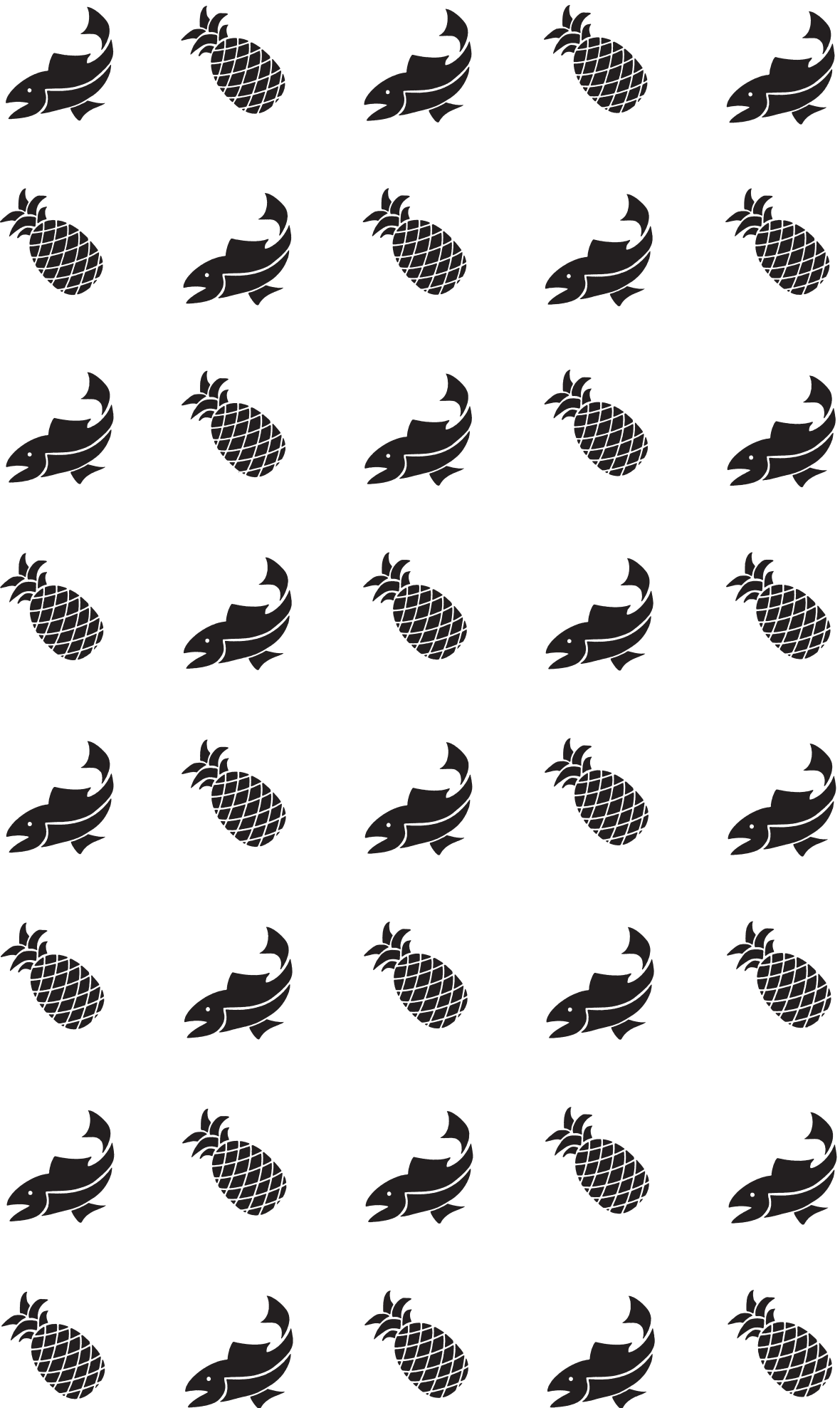


Agriculture & Aquaculture



Section 5

AGRICULTURE & AQUACULTURE

This section includes statistics on agriculture and aquaculture. Statistics about farms are presented along with the value and distribution of farm and other land based herbaculture production. Fish catches and other aquaculture statistics are given.

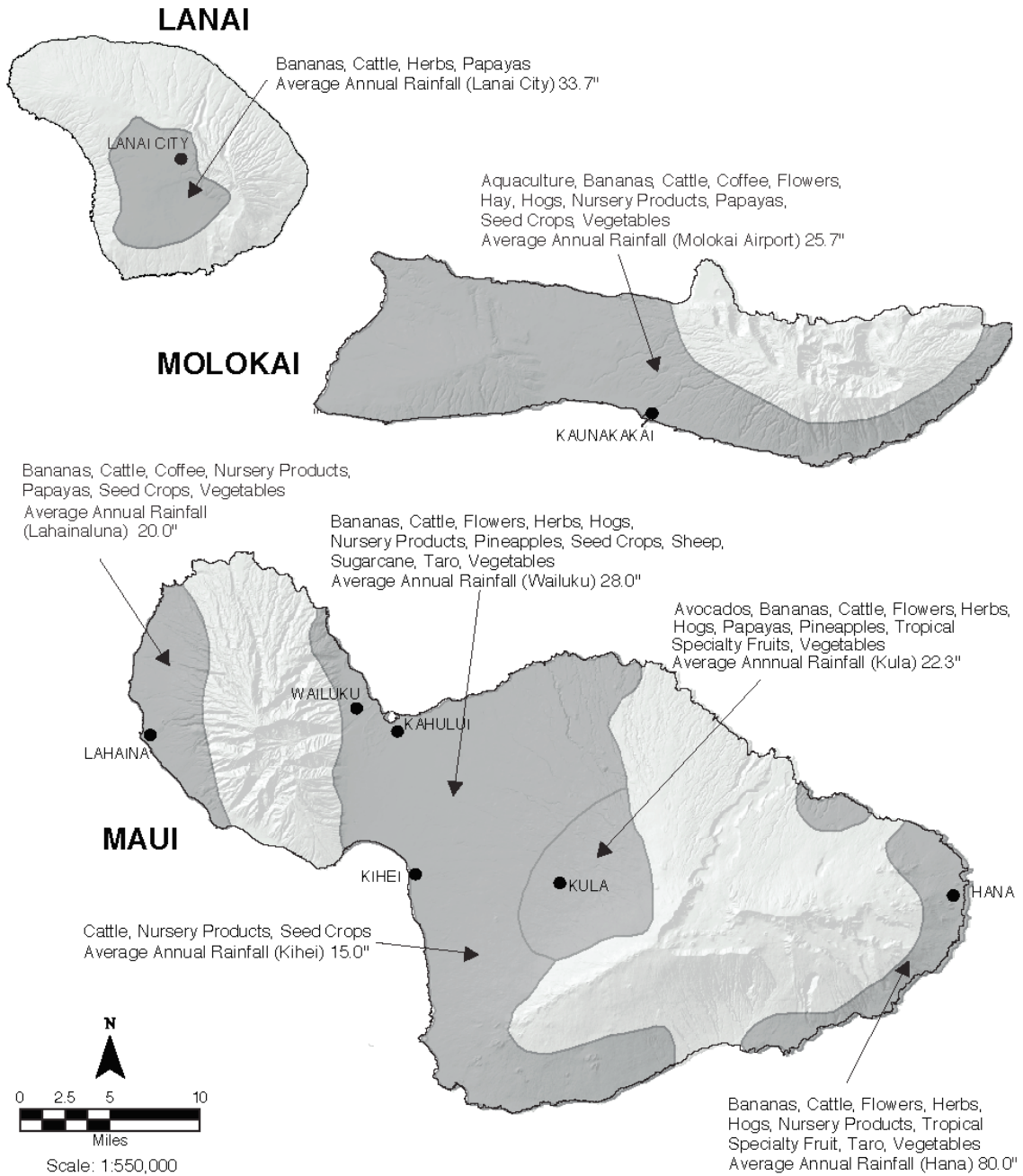
Maui's last sugar plantation closed in 2016 and therefore data on sugarcane has been discontinued. Coffee production in the state is now featured.

Agriculture remains an important element in Maui County's economy and land use patterns. The trend toward diversification of agriculture continues.

The data in this section comes mainly from the 2017 U.S. Census of Agriculture, the Hawai'i Agriculture Statistics Service, specific crop producers, and the Hawai'i State Department of Land and Natural Resources.

5.1.1

**AGRICULTURAL AREAS
MAUI COUNTY**



SOURCE: HAWAII DEPARTMENT OF AGRICULTURE, AGRICULTURAL DEVELOPMENT DIVISION, AND U.S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE. STATISTICS OF HAWAII AGRICULTURE, 2011.

5.1.2

**TENURE AND CHARACTERISTICS OF FARM OPERATORS
AND TYPES OF FARM ORGANIZATION
MAUI COUNTY**

	2002	2007	2012	2017
Tenure of Operator				
Full Owners				
Farms	529	827	774	1,031
Acres	82,274	62,325	94,317	124,568
Part Owners				
Farms	115	138	151	133
Acres	135,661	141,052	108,528	102,257
Owned land in farms (acres)	102,342	105,762	75,931	70,577
Rented land in farms (acres)	33,319	35,290	32,597	31,680
Tenants				
Farms	179	191	203	244
Acres	38,755	22,191	26,321	22,131
Operator Characteristics				
Place of Residence				
On farm operated	623	929	840	1,772
Not on farm operated	200	227	288	625
Principal Occupation				
Farming	434	515	609	892
Other	389	641	519	1,017
Days of Work Off Farm¹				
None	413	229	406	723
Any	410	927	722	1,186
1 to 49 days	47	155	100	248
50 to 99 days	36	151	125	103
100 to 199 days	63	166	144	252
200 days or more	264	455	353	583
Years on Present Farm				
2 years or less	46	51	36	142
3 or 4 years	66	68	89	178
5 to 9 years	189	284	201	420
10 years or more	522	753	802	1,169
Average years on present farm	15.3	16.7	19.1	16.6

5.1.2
CONTINUED

	2002	2007	2012	2017
Age Group				
Under 25 years	4	4	4	12
25 to 34 years	26	32	37	78
35 to 44 years	108	89	78	154
45 to 54 years	310	314	227	273
55 to 64 years	NA	NA	NA	614
65 to 74 years	NA	NA	NA	555
75 years and over	NA	NA	NA	223
Average age	55.0	57.7	59.0	60.4
Male				
Farms	659	856	873	1,194
Acres	241,920	217,574	201,222	223,781
Female				
Farms	164	300	255	951
Acres	14,770	7,994	27,944	96,440
Type of Organization				
Individual or Family (sole proprietorship)				
Farms	701	975	904	1,114
Acres	D	34,647	65,110	58,004
Partnership				
Farms	37	66	96	123
Acres	11,357	11,751	32,275	39,416
Corporation (family held)				
Farms	58	69	64	94
Acres	76,424	114,456	113,188	100,189
Corporation (other than family held)				
Farms	17	33	27	23
Acres	99,056	60,646	D	D
Other (cooperative, estate or trust, institutional, etc.)				
Farms	10	13	37	54
Acres	D	4,068	D	D

D: Withheld to avoid disclosing data for individual farms

NA: Not available

1. Number of days of work off farm revised 2002.

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.3

FARMS AND LAND IN FARMS MAUI COUNTY

	2002	2007	2012	2017
Farms	823	1,156	1,128	1,408
Land in Farms	256,690	225,568	229,166	248,956
Average size of farms (acres)	312	195	203	177
Median size of farms (acres)	5	5	5	4
Estimated Market Value of Land & Buildings¹				
Average per farm (\$)	1,251,598	1,601,950	1,998,208	2,027,299
Average per acre (\$)	4,112	8,210	9,836	11,466
Estimated Market Value of Machinery & Equipment¹				
Average per farm (\$)	58,849	52,480	53,228	51,466
Farms by Size				
1 to 9 acres	505	766	711	1,010
10 to 49 acres	212	289	293	252
50 to 179 acres	56	48	61	75
180 to 499 acres	20	21	24	23
500 to 999 acres	7	11	10	16
1,000 acres or more	23	21	29	32
Total Cropland				
Farms	692	975	902	1,148
Acres	60,729	54,557	49,578	56,551
Harvested Cropland				
Farms	649	928	852	1,057
Acres	28,404	26,528	D	7,132
Irrigated Land				
Farms	462	650	603	651
Acres	26,855	28,027	41,548	4,849
Value of Agricultural Products Sold (\$1,000)	124,511	139,326	188,100	82,206
Crops, including greenhouse & nursery crops	116,645	132,058	181,480	74,211
Livestock, poultry, and their products	7,866	7,268	6,620	7,995
Value of Agricultural Products Sold per Farm (\$)	151,289	120,524	166,755	58,385

1. Data based on a sample of farms.

D: Withheld to avoid disclosing data for individual farms

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.4

FARM EMPLOYMENT MAUI COUNTY

	2002	2007	2012	2017
Number of Farms Hiring	267	245	328	365
Number of Farms Hiring Migrant Workers	5	17	6	14
Hired Workers	2,804	2,051	2,311	1,880
Worked 150 days or more	1,856	1,386	1,655	1,174
Migrant workers	NA	NA	26	36
Payroll (\$1,000)	52,542	47,311	99,270	62,694

NA: Not available

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.5

LIVESTOCK: NUMBER OF OPERATIONS AND VALUE OF SALES, MAUI COUNTY

	2002	2007	2012	2017
Number of Livestock Operations, December 31				
Cattle	145	190	204	193
Hogs	54	57	81	80
Goats	12	86	131	214
Sheep and lambs	9	33	24	59
Horses	107	175	112	115
Poultry	48	119	119	211
Bees	8	41	50	114
Aquaculture	8	2	18	NA
Value of Livestock Sales (\$1,000)				
Cattle	4,670	5,689	5,231	D
Hogs	946	724	D	506
Goats	NA	NA	210	204
Sheep and lambs	NA	NA	21	45
Horses	NA	NA	51	D
Poultry	NA	NA	NA	NA
Bees	NA	NA	96	70
Aquaculture	D	D	D	NA

D: Withheld to avoid disclosure of individual operations

NA: Not available

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.6

VEGETABLES ACREAGE AND NUMBER OF FARMS, MAUI COUNTY

	2012		2017	
	Farms	Acres	Farms	Acres
Asparagus	6	D	5	D
Beans, Green Lima	3	1	8	4
Beans, Snap	28	38	35	119
Beets	13	7	27	12
Broccoli	11	69	15	73
Cabbage, Chinese	20	52	16	30
Cabbage, Head	16	106	13	80
Cabbage, Mustard	9	15	4	D
Carrots	6	2	18	25
Celery	2	D	4	1
Cucumbers and Pickles	18	236	16	D
Daikon	3	11	23	26
Eggplant	40	23	22	10
Garlic	1	D	7	D
Herbs, Fresh Cut	15	56	51	47
Kale	14	4	38	39
Lettuce, All	39	62	30	66
Mustard Greens	4	1	13	3
Okra	11	2	11	2
Onions, Dry	23	D	13	55
Onions, Green	33	31	27	19
Parsley	15	36	14	15
Peas, Chinese	4	2	12	2
Peppers, Bell	6	D	9	10
Peppers, Other than Bell	2	D	17	2
Potatoes	13	4	9	2
Pumpkins	24	D	15	33
Radishes	9	19	10	11
Squash, All	20	131	14	13
Sweet Corn	40	95	16	D
Sweet Potatoes	32	D	12	D
Taro ¹	NA	NA	58	85
Tomatoes	42	89	25	27
Watercress	4	D	4	D
Other Vegetables	60	276	71	127
Total	221	1,798	221	1,377

D: Withheld to avoid disclosure of individual operations. NA: Not available.

1. Taro root added to the vegetable section, removed from the field crop section.

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.7

**COFFEE
STATE OF HAWAI'I**

	Cherry Basis			
	Bearing Acreage	Yield per Acre	Total Production	Harvested not Sold
	(1,000 acres)	(1,000 pounds)	(1,000 pounds)	(1,000 pounds)
2015-2016	6.9	4.60	31,740	1,603
2016-2017	7.0	4.18	29,260	689
*2017-2018	7.3	3.53	25,416	824

	Utilized Production	Price per Pound	Value of Utilized Production
	(1,000 pounds)	(\$)	(\$1,000)
Cherry			
2015-2016	30,137	1.55	46,712
2016-2017	28,571	1.71	48,856
*2017-2018	24,592	1.78	43,774
Parchment			
2015-2016	6,600	9.38	61,908
2016-2017	5,400	11.10	59,940
*2017-2018	6,050	11.10	67,155
Green			
2015-2016	5,280	10.50	55,440
2016-2017	4,320	16.50	71,280
*2017-2018	4,840	17.20	83,248

* Revised data

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE.

5.1.8

FRUITS AND NUTS MAUI COUNTY

	2012		2017	
	Farms	Acreage	Farms	Acreage
Noncitrus Fruits	440	1,512	667	2,809
Apples	4	D	16	7
Avocados	193	D	305	D
Bananas	232	199	313	253
Cherimoyas	NA	NA	17	8
Cherries, Tart	NA	NA	6	1
Coffee	77	D	95	D
Grapes	1	D	5	D
Guavas	28	20	30	9
Mangoes	59	36	105	54
Papayas	71	101	129	175
Passion Fruit	38	14	74	18
Peaches	6	D	15	D
Persimmons	19	39	26	47
Pineapple	6	D	55	D
Plums and Prunes	NA	NA	3	Z
Pomegranates	5	1	14	3
Other	120	182	202	339
Citrus Fruits	206	161	378	286
Grapefruit	34	11	93	30
Kumquats	2	D	9	D
Lemons	98	30	207	55
Limes	84	36	201	64
Oranges, All	78	41	219	72
Tangelos	21	D	59	D
Tangerines	57	19	119	35
Other	47	22	31	16
Nuts	71	592	67	579
Almonds	NA	NA	2	D
Macadamia Nuts	58	574	65	D
Pecans, All	NA	NA	2	D
Other Nuts	16	18	1	D

D: Withheld to avoid disclosure of individual operations. NA: Not available. Z: Less than half of the unit shown

Note: Totals may not add due to rounding.

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.9

FLORICULTURE AND NURSERY PRODUCTS MAUI COUNTY

Number of farms and growing area

2017	Farms	Sq ft under glass	Open acreage	Value of sales (\$)
Aquatic plants	4	0	2	13,898
Bulbs and tubers	3	0	D	15,000
Cuttings and seedlings	11	30,000	D	D
Bedding & garden plants	46	99,400	10	718,765
Cut flowers	166	259,340	449	3,693,146
Foliage, indoor	16	82,427	20	793,000
Potted flowering plants	39	210,156	3	1,347,700
Nursery stock crops	83	492,766	114	5,119,153
Sod	8	X	26	841,530
Vegetable seeds	2	0	D	D
Vegetable transplants	2	D	0	D

D: Withheld to avoid disclosure of individual operations. X: Not applicable

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.10

FARM MACHINERY AND EQUIPMENT, MAUI COUNTY

	2002*	2007	2012	2017
Value of all equipment (\$1000)	44,843	60,352	60,042	72,464
Average per farm (\$)	58,849	52,480	53,228	51,466
Trucks				
Farms	NA	862	774	1,001
Number	NA	1,362	1,347	1,602
Tractors				
Farms	453	547	554	586
Number	881	974	1,032	994
Grain and bean combines				
Farms	1	1	6	3
Number	D	D	9	D
Forage harvesters				
Farms	NA	13	5	1
Number	NA	13	5	D
Hay balers				
Farms	2	3	1	4
Number	D	3	D	4

* 2002 data are based on a sample of farms.

D: Withheld to avoid disclosure of individual operations. NA: Not available

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.11

FERTILIZERS AND CHEMICALS APPLIED MAUI COUNTY

In acres

	2002	2007	2012	2017
Commercial fertilizer	51,645	42,248	40,923	9,664
Manure	313	395	1,214	776
Acres treated to control				
Insects	9,901	5,566	4,424	8,891
Weeds	40,933	28,416	46,098	15,416
Nematodes	1,730	2,812	861	415
Diseases in crops	3,165	1,757	1,647	1,557
Chemicals used to control growth, thin fruit, ripen or defoliate	D	D	D	358

D: Data not provided to avoid disclosing individual information

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.12

ORGANIC AGRICULTURE STATE OF HAWAI'I

2017	State of Hawai'i	Hawai'i County	Honolulu County	Kaua'i County	Maui County
USDA Certified organic farms	152	84	22	11	35
USDA Exempt from certification organic farms ¹	15	5	3	2	5
Farms transitioning to organic	23	9	6	0	8
Value of sales of Certified or Exempt organically produced commodities					
Number of farms	146	81	25	13	27
Total organic product sales (\$1,000)	15,359	8,717	1,541	2,634	2,467
Farms by value of sales					
\$1 to \$4,999	21	7	3	2	9
\$5,000 or more	125	74	22	11	18

1. Small organic farms with gross agricultural income from organic sales less than \$5,000 per year.

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.13

**AGRICULTURAL TOURISM
BY COUNTY**

	State of Hawai'i	Hawai'i County	Honolulu County	Kaua'i County	Maui County
2007					
Farms	121	58	24	9	30
Value (\$1,000)	22,911	D	6,647	D	8,464
2012					
Farms	233	106	36	39	52
Value (\$1,000)	17,768	1,029	6,449	3,874	6,416
2017					
Farms	294	172	28	25	69
Value (\$1,000)	16,609	D	D	1,525	7,590

Note: Agricultural tourism is a commercial enterprise on a working farm conducted for the enjoyment, education, and/or active involvement of the visitor, generating supplemental income for the farm. Activities such as producing and selling products directly from the farm, operating a bed and breakfast, conducting educational farm tours, offering horseback riding, festivals, concerts, and many other on-farm activities qualify as ag-tourism.

SOURCE: U. S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.1.14

**FARM INCOME AND EXPENSES
MAUI COUNTY**

In thousands of dollars

	2002	2007	2012	2017
Income				
Total sales	124,511	139,326	188,100	82,206
Total income from farm-related sources, gross before tax and expenses	3,345	14,642	8,761	9,812
Customwork and other agricultural services	427	306	448	792
Gross cash rent or share payments	1,520	D	1,533	737
Sales of forest products	7	D	D	42
Agri-tourism and recreational services	907	8,464	6,416	7,590
Patronage dividends and refunds from cooperatives	4	D	D	6
Crop and livestock insurance payments	NA	D	146	143
Amount from state and local government payments	NA	D	184	120
Other farm-related income sources	480	D	92	382
Total federal government payments	264	688	558	2,174
Total farm production expenses	113,624	129,617	195,907	107,246
Fertilizer and lime purchased	4,714	7,976	15,426	3,523
Chemicals purchased	5,538	4,008	12,092	1,654
Seeds, plants, vines and trees purchased	2,368	3,810	5,534	1,685
Livestock purchased	545	601	679	595
Feed purchased	2,575	3,669	3,261	2,080
Petroleum products purchased	3,862	7,316	11,492	3,620
Utilities	7,294	9,857	3,978	4,688
Repairs, supplies and maintenance costs	16,472	21,992	23,095	7,738
Hired farm labor	52,542	47,311	99,270	62,694
Contract labor	967	2,530	1,670	1,725
Customwork and custom hauling	272	138	341	391
Cash rent for land, building and grazing fees	3,448	3,409	2,037	2,201
Rent and lease expenses	653	996	593	734
Interest expense	688	2,019	1,988	4,557
Property tax paid	1,006	2,170	2,294	3,712
Medical supplies, veterinary, and custom services	NA	0		
All other production expenses	10,682	11,815	0	329
Net cash farm income of the operations	12,303	25,039	1,512	(13,054)

NA: Not available

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURAL STATISTICS SERVICE, CENSUS OF AGRICULTURE.

5.2.1

SEA LANDINGS BY FISHING METHOD AND SPECIES GROUP STATE OF HAWAI'I

Pounds landed

	2013	2014	2015	2016	2017
Fishing Method					
Aku Pole & Line	*	*	*	*	*
Longline	26,946,146	23,807,814	32,635,674	30,261,327	32,551,651
Deep Bottom Handline	453,239	462,414	397,245	401,774	472,177
Tuna Handline	2,341,090	1,660,354	1,711,745	1,166,568	1,302,119
Trolling	3,117,723	3,417,836	3,016,724	2,540,086	2,196,628
All Other	1,430,017	1,274,772	1,233,685	1,088,829	856,254
Total	34,288,215	30,623,190	38,995,073	35,458,584	37,378,829
Species Group					
Tunas	21,578,691	18,309,846	24,514,890	23,538,751	25,088,163
Bill & Swordfish	4,514,726	4,052,962	5,916,944	4,935,545	5,973,798
Misc. Pelagic	6,501,895	6,617,202	6,941,202	5,446,791	4,946,465
Deep Bottomfish	442,574	455,028	398,148	426,192	476,032
Akule/'Ōpelu	511,068	536,655	635,832	597,625	412,851
Inshore	395,832	370,713	303,934	256,712	245,543
All Other	343,429	280,784	284,123	256,967	235,978
Total	34,288,215	30,623,190	38,995,073	35,458,584	37,378,829

* Due to low level of fishermen reporting and to preserve confidentiality, data for these methods are pooled under "All Other" group.

SOURCE: STATE OF HAWAI'I, DEPARTMENT OF LAND AND NATURAL RESOURCES, DIVISION OF AQUATIC RESOURCES,
COMMERCIAL MARINE LANDINGS SUMMARY TREND REPORT, CALENDAR YEAR REPORTS.

5.2.2

SEA LANDINGS BY PORT OF LANDING

Pounds landed

Port of Landing	2013	2014	2015	2016	2017
Maui County	792,087	951,636	806,170	775,086	653,759
Maui	738,541	901,295	763,398	740,223	623,590
Moloka'i	46,423	40,506	35,902	26,088	21,663
Lāna'i	7,184	9,835	6,870	8,775	8,506
O'ahu	29,877,658	25,882,328	34,504,303	31,969,413	33,870,735
Hawai'i	2,796,997	3,017,653	2,909,455	2,009,945	2,218,973
Kaua'i and Ni'ihau	821,473	771,573	775,145	704,139	635,363
Total	34,288,215	30,623,190	38,995,073	35,458,584	37,378,829

SOURCE: STATE OF HAWAII, DEPARTMENT OF LAND AND NATURAL RESOURCES, DIVISION OF AQUATIC RESOURCES, COMMERCIAL MARINE LANDINGS SUMMARY TREND REPORT, CALENDAR YEAR REPORTS.

5.2.3

SEA LANDINGS BY AREA FISHED MAUI COUNTY

Pounds landed

Area Fished	2013	2014	2015	2016	2017
Kawai (Moloka'i Channel)	19,675	30,859	16,283	14,649	18,251
Penguin Bank	133,663	127,220	112,043	107,115	128,834
Kealaikahiki Channel	44,958	80,128	62,602	66,483	57,912
'Alenuihāhā Channel	88,649	162,585	113,565	113,718	98,191
'Au'au, Kalohi & Pailolo Channels	40,454	38,725	34,498	29,462	36,009
'Alalākeiki Channel	105,366	103,051	64,541	63,530	85,344
Moloka'i	43,523	39,838	22,061	24,108	39,219
Lāna'i	92,158	67,124	63,824	58,677	48,203
Kaho'olawe	18,526	9,368	4,020	4,168	22,685
Mākena - Hāna	32,199	23,506	26,348	18,377	22,533
Hāna - Kahului	177,724	215,436	265,400	127,431	157,055
Honolua - Lahaina	3,160	3,637	5,227	15,278	7,728
Lahaina - Mākena	71,056	67,769	54,979	151,356	56,926

SOURCE: STATE OF HAWAII, DEPARTMENT OF LAND AND NATURAL RESOURCES, DIVISION OF AQUATIC RESOURCES, COMMERCIAL MARINE LANDINGS SUMMARY TREND REPORT, CALENDAR YEAR REPORTS.