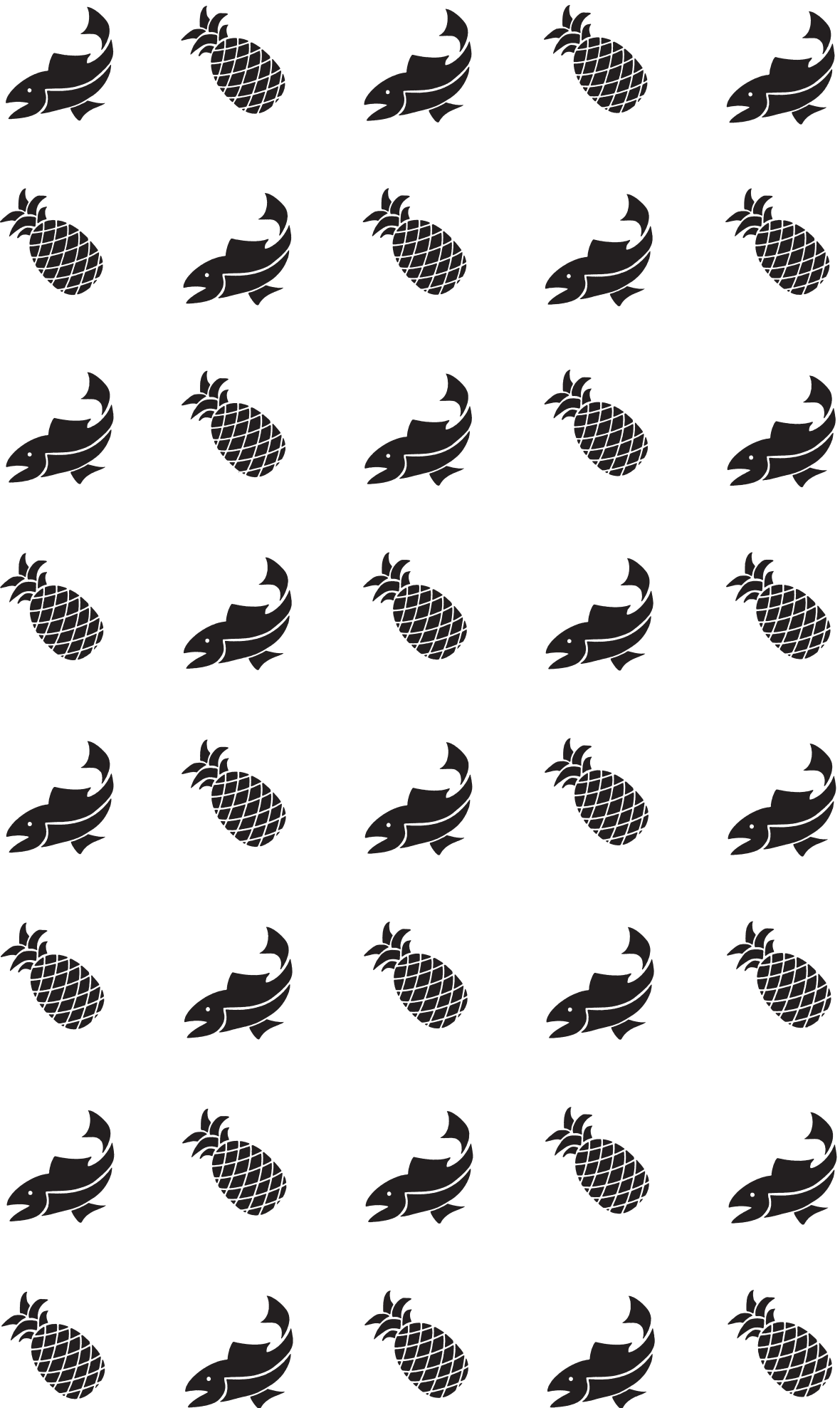


# Agriculture & Aquaculture



## 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.

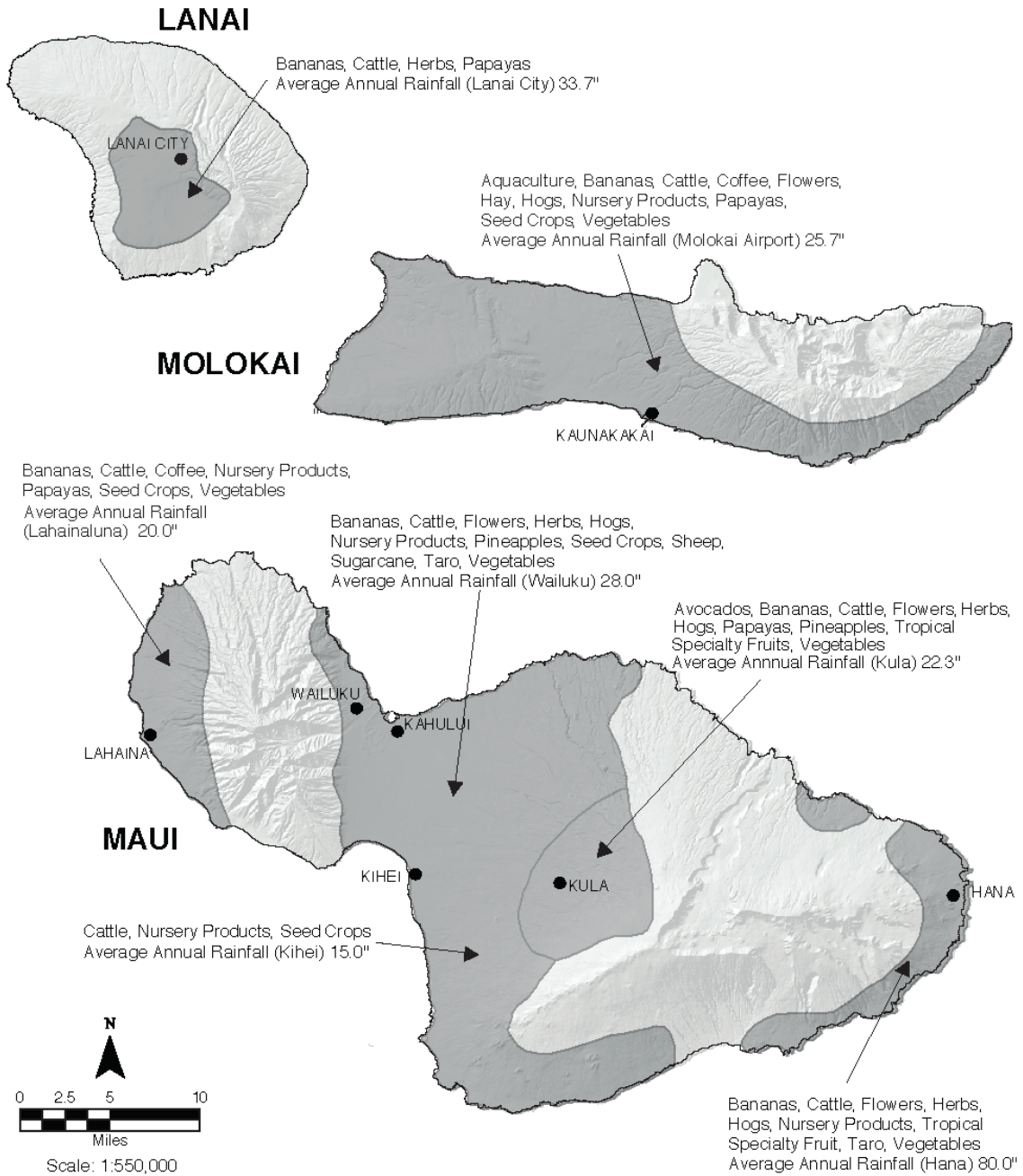
Maui's last sugar plantation closed in 2016 and therefore data on sugarcane has been discontinued. Coffee production in the state is now featured.

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
<b>Tenure of Operator</b>				
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
<b>Operator Characteristics</b>				
Place of Residence				
On farm operated	623	929	840	1,772
Not on farm operated	200	227	288	625
<b>Principal Occupation</b>				
Farming	434	515	609	892
Other	389	641	519	1,017
<b>Days of Work Off Farm<sup>1</sup></b>				
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
<b>Years on Present Farm</b>				
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**

	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>2017</b>
<b>Age Group</b>				
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
<b>Male</b>				
Farms	659	856	873	1,194
Acres	241,920	217,574	201,222	223,781
<b>Female</b>				
Farms	164	300	255	951
Acres	14,770	7,994	27,944	96,440
<b>Type of Organization</b>				
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
<b>Farms</b>	<b>823</b>	<b>1,156</b>	<b>1,128</b>	<b>1,408</b>
<b>Land in Farms</b>	<b>256,690</b>	<b>225,568</b>	<b>229,166</b>	<b>248,956</b>
Average size of farms (acres)	312	195	203	177
Median size of farms (acres)	5	5	5	4
<b>Estimated Market Value of Land &amp; Buildings<sup>1</sup></b>				
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
<b>Estimated Market Value of Machinery &amp; Equipment<sup>1</sup></b>				
Average per farm (\$)	58,849	52,480	53,228	51,466
<b>Farms by Size</b>				
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
<b>Total Cropland</b>				
Farms	692	975	902	1,148
Acres	60,729	54,557	49,578	56,551
<b>Harvested Cropland</b>				
Farms	649	928	852	1,057
Acres	28,404	26,528	D	7,132
<b>Irrigated Land</b>				
Farms	462	650	603	651
Acres	26,855	28,027	41,548	4,849
<b>Value of Agricultural Products Sold (\$1,000)</b>	<b>124,511</b>	<b>139,326</b>	<b>188,100</b>	<b>82,206</b>
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
Processed or value-added agricultural products	NA	NA	NA	16,369
<b>Value of Agricultural Products Sold per Farm (\$)</b>	<b>151,289</b>	<b>120,524</b>	<b>166,755</b>	<b>58,385</b>

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
<b>Number of Farms Hiring</b>	267	245	328	365
<b>Number of Farms Hiring Migrant Workers</b>	5	17	6	14
<b>Hired Workers</b>	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
<b>Payroll (\$1,000)</b>	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
<b>Number of Livestock Operations, December 31</b>	<b>206</b>	<b>284</b>	<b>284</b>	<b>410</b>
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	10	11
<b>Value of Livestock Sales (\$1,000)</b>	<b>7,866</b>	<b>7,268</b>	<b>6,620</b>	<b>7,995</b>
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	D	20	D	194
Bees	NA	NA	96	70
Aquaculture	D	D	D	D

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 <sup>1</sup>	NA	NA	58	85
Tomatoes	42	89	25	27
Watercress	4	D	4	D
Other Vegetables	60	276	71	127
<b>Total</b>	<b>221</b>	<b>1,798</b>	<b>221</b>	<b>1,377</b>

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)
2017-2018	7.2	3.530	25,416	824
2018-2019	7.1	3.845	27,300	900
2019-2020	6.9	3.952	27,270	390
2020-2021	6.9	3.999	27,590	1,100

Basis	Utilized Production	Price per Pound	Value of Utilized Production
	(1,000 pounds)	(\$)	(\$1,000)
<b>Cherry</b>			
2017-2018	24,592	1.78	43,774
2018-2019	26,400	1.90	50,160
2019-2020	26,880	2.02	54,298
2020-2021	26,490	2.11	55,894
<b>Parchment</b>			
2017-2018	6,050	11.10	67,155
2018-2019	6,850	13.40	91,790
2019-2020	6,400	14.10	90,240
2020-2021	6,550	11.70	76,635
<b>Green</b>			
2017-2018	4,840	17.20	83,248
2018-2019	5,480	19.40	106,312
2019-2020	5,120	20.10	102,912
2020-2021	5,240	18.70	97,988

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

## 5.1.8

## FRUITS AND NUTS MAUI COUNTY

	2012		2017	
	Farms	Acreage	Farms	Acreage
<b>Noncitrus Fruits</b>	<b>440</b>	<b>1,512</b>	<b>667</b>	<b>2,809</b>
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
<b>Citrus Fruits</b>	<b>206</b>	<b>161</b>	<b>378</b>	<b>286</b>
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
<b>Nuts</b>	<b>71</b>	<b>592</b>	<b>67</b>	<b>579</b>
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 <sup>1</sup>	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
<b>2007</b>					
Farms	121	58	24	9	30
Value (\$1,000)	22,911	D	6,647	D	8,464
<b>2012</b>					
Farms	233	106	36	39	52
Value (\$1,000)	17,768	1,029	6,449	3,874	6,416
<b>2017</b>					
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
<b>Income</b>				
<b>Total sales</b>	124,511	139,326	188,100	82,206
<b>Total income from farm-related sources, gross before tax and expenses</b>	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
<b>Total federal government payments</b>	264	688	558	2,174
<b>Total farm production expenses</b>	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
<b>Net cash farm income of the operations</b>	<b>12,303</b>	<b>25,039</b>	<b>1,512</b>	<b>(13,054)</b>

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*

	2017	2018	2019	2020	2021
<b>Fishing Method</b>					
Aku Pole & Line	*	*	*	*	*
Longline	32,551,651	30,798,457	30,098,067	24,045,181	25,437,196
Deep Bottom Handline	472,177	283,624	301,378	223,566	249,648
Tuna Handline	1,302,119	1,201,310	1,210,071	1,009,058	1,073,038
Trolling	2,196,628	2,725,553	2,488,466	1,492,059	1,836,268
All Other	856,254	804,234	799,822	734,852	646,229
<b>Total</b>	<b>37,378,829</b>	<b>35,813,178</b>	<b>34,897,804</b>	<b>27,504,716</b>	<b>29,242,379</b>
<b>Species Group</b>					
Tunas	25,088,163	23,921,389	23,247,875	20,594,492	22,193,279
Bill & Swordfish	5,973,798	5,098,893	5,434,048	3,169,926	3,322,172
Misc. Pelagic	4,946,465	5,651,760	5,082,805	2,789,663	2,866,648
Deep Bottomfish	476,032	302,152	322,169	258,016	264,221
Akule/'Ōpelu	412,851	387,440	370,084	345,267	323,987
Inshore	245,543	241,785	237,298	261,716	198,848
All Other	235,978	209,759	203,524	85,635	73,225
<b>Total</b>	<b>37,378,829</b>	<b>35,813,178</b>	<b>34,897,804</b>	<b>27,504,716</b>	<b>29,242,379</b>

\* 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	2017	2018	2019	2020	2021
Maui County	653,759	664,735	642,050	371,158	466,974
Maui	623,590	631,107	619,384	355,547	450,281
Moloka'i	21,663	21,488	15,713	9,103	12,816
Lāna'i	8,506	12,141	6,953	6,508	3,877
O'ahu	33,870,735	32,133,873	31,388,301	25,077,474	26,478,714
Hawai'i	2,218,973	2,285,210	2,207,788	1,586,280	1,802,027
Kaua'i and Ni'ihau	635,363	729,360	659,665	469,804	494,665
<b>Total</b>	<b>37,378,829</b>	<b>35,813,178</b>	<b>34,897,804</b>	<b>27,504,716</b>	<b>29,242,379</b>

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	2017	2018	2019	2020	2021
Ka'iwi (Moloka'i Channel)	18,251	12,926	19,236	10,690	8,984
Penguin Bank	128,834	82,003	96,107	67,435	61,756
Kealaikahiki Channel	57,912	78,980	69,909	22,156	19,241
'Alenuihāhā Channel	98,191	86,993	77,348	30,456	52,517
'Au'au, Kalohi & Pailolo Channels	36,009	25,424	17,226	12,224	18,054
'Alalākeiki Channel	85,344	79,876	57,806	47,105	42,094
Moloka'i	39,219	15,417	13,958	11,659	13,739
Lāna'i	48,203	76,996	58,862	31,142	67,320
Kaho'olawe	22,685	7,265	16,413	21,541	6,451
Mākena - Hāna	22,533	16,202	19,497	16,077	13,845
Hāna - Kahului	157,055	234,108	177,217	112,330	154,872
Honolua - Lahaina	7,728	2,650	2,002	1,564	1,914
Lahaina - Mākena	56,926	44,439	42,564	51,278	39,063

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