

## CHAPTER 12. CALIFORNIA'S NURSERY AND FLORAL INDUSTRY

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### ABSTRACT

Nursery and floral production is an important component of California's agricultural output, accounting for 7.5 percent of the state's farm sales. Annual sales of \$3.5 billion mean that California accounts for 20 percent of U.S. sales of nursery and floral products. Nursery and flower production occurs throughout California, but is mostly concentrated in Central Coast and South Coast counties near the largest population centers; a third of sales are in San Diego County.

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Nursery and floral production is an important component of California's overall agricultural output and annual farm income. California's nursery and flower crops returned average cash revenues of over \$3.73 billion annually for the five crop years 2013 through 2017.

Photo Credit: UC Davis

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## NURSERY AND FLORAL PRODUCTION

Nursery and floral production is an important component of California's overall agricultural output and annual farm income. California's nursery and flower crops returned average cash revenues of over \$3.73 billion annually for the five crop years 2013 through 2017. Only three California crops exceeded this annual average for the 5-year period: dairy and milk, \$7.18 billion; almonds, \$6.08 billion; and, all grapes, \$5.51 billion. Overall, the annual nursery and floral share of total agricultural sales ranged between 6.2 to 7.5 percent from 2013 to 2017, with a 5-year average of 6.9 percent. Nursery and flower production is located throughout California, with at least one farm operation reported in 56 of 58 counties. The industry has a definite urban orientation, with the majority of production taking place in the most populated counties.

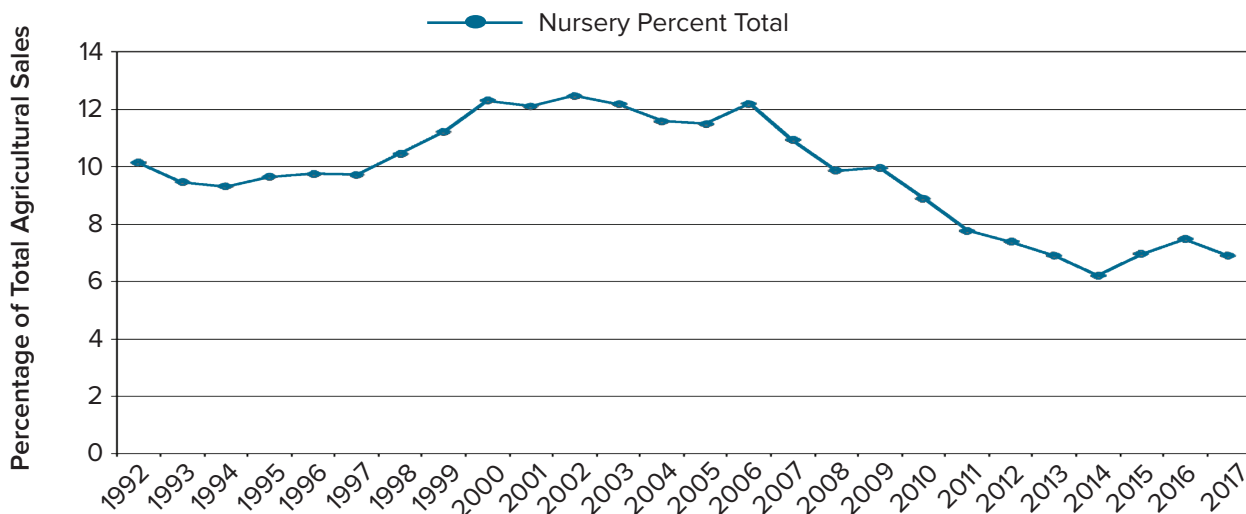
### NURSERY AND FLORAL INDUSTRY SALES

California nursery and floriculture production and sales enjoyed a 15-year expansion, with sales rising from \$1.96 billion in 1993 to a record high of \$3.98 billion in 2007. Nursery and floral sales were increasing relative to the rest of California, production through 2002, when they accounted for 12.5 percent of total California agricultural sales (Figure 12.1).

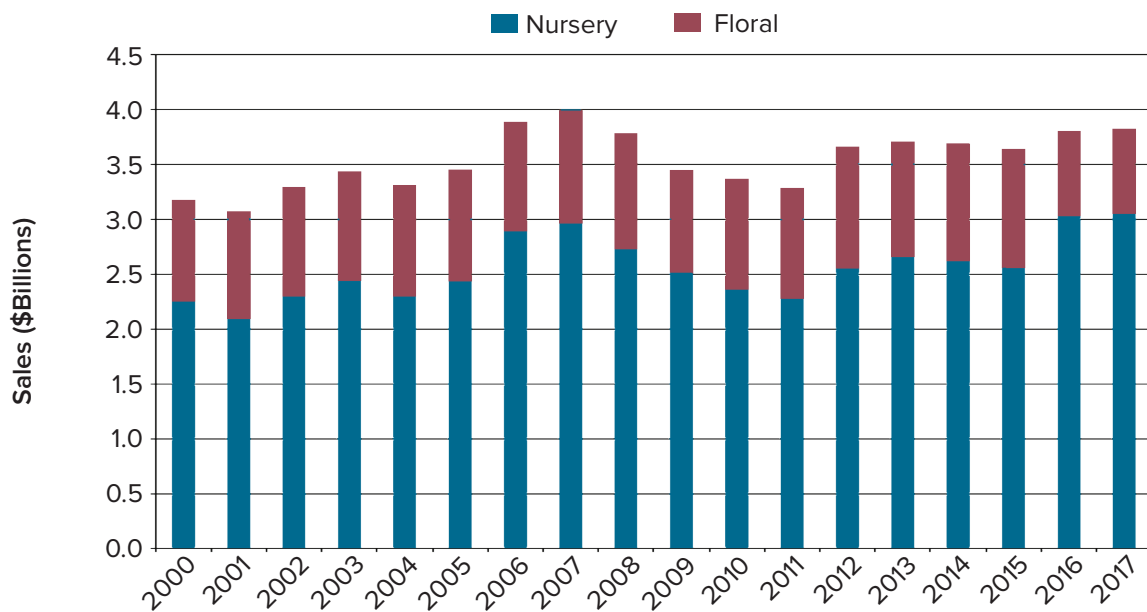
While nursery and floral sales continued to grow through 2007, growth of total agricultural sales resulted in the nursery sales percentage of total sales remaining rather constant in a range of 11.5 to 12.5 percent before dropping to 10.9 percent in 2007 (Figure 12.1). While California's total agricultural sales increased from \$36.4 billion in 2007 to almost \$59.4 billion in 2014, nursery and floral sales relative to total agricultural sales dropped to a low of 6.2 percent in 2014. Between 2014 and 2016, the increase in nursery and floral relative to total agricultural sales was the result of total agricultural sales decreasing to \$50.95 billion, while nursery and floral sales increased to \$3.8 billion in 2016. All sales increased in 2017, but total agricultural sales increased faster than did nursery and floral sales.

Figure 12.2 shows annual floral and nursery sales. The largest components of the floral crop category include cut flowers and greens and potted flowering plants. Floral sales ranged from a low of \$932 million in 2000 to a high of \$1.112 billion in 2012, before dropping to \$770 million in 2016 and 2017. The largest components of annual nursery sales are ornamental plants and nursery stock. Total nursery sales ranged from a low of \$2.087 billion in 2001 to a high of \$2.962 billion in 2007, then decreased to

Figure 12.1. Annual California Floral and Nursery Sales as a Percent of Total Agricultural Sales, 1992–2017



Sources: USDA/NASS and California Agricultural Statistics, Annual Issues 2003–2018

**Figure 12.2. Annual Value of California Floral and Nursery Production, 2000–2017**

Sources: USDA, NASS and *California Agricultural Statistics*, Annual Issues 2003–2018

\$2.275 billion in 2011 before recovering to \$3.05 billion in 2017. Note that average annual sales of floral products were \$953 million from 2013 through 2017, while average annual sales of nursery products were \$2.781 billion for the same period. The split for total floral and nursery sales are typically 25 to 30 percent floral and 70 to 75 percent nursery.

bedding and garden plants, 34 percent of potted flowering plants, and 78 percent of the total cut flower wholesale value (*California Agricultural Statistics Review*, 2015–2016).

California's nursery and floral industry plays a leading role nationally. The USDA 2014 Census of Horticultural Specialties, which gathered data for all horticultural operations with sales greater than \$10,000, reported that 1,710 California operations had 2014 total sales of \$2.878 billion, accounting for almost 20.9 percent of total U.S. sales of \$13.79 billion. California was followed by Florida, (13 percent); Oregon, (6.8 percent); Michigan, (4.7 percent); Texas, (4.3 percent); and North Carolina, (4.1 percent). Thus, the top six states accounted for 53.8 percent of total U.S. sales of horticultural specialty crops.

USDA, NASS annually surveys commercial floricultural operations with sales of more than \$100,000. They reported that 685 California producers with floricultural sales of \$1.08 billion accounted for 25 percent of the U.S. wholesale value in 2015. California accounted for 14 percent of



## STRUCTURE OF CALIFORNIA'S NURSERY AND FLORAL INDUSTRY

The Census of Agriculture reported that total California sales of nursery and floriculture crops increased from just over \$1.413 billion in 1987 to almost \$3.65 billion in 2007, and then dropped to \$2.51 billion in 2012 before recovering to \$2.934 billion in 2017 (Table 12.1).

Data in each row of Table 12.1 describe changes occurring over time in the California nursery and floral industry. The number of farms producing nursery and floriculture products increased steadily from 2,993 in 1987 to 4,388 in 2002 and then dropped back to 2,758 in 2017. With total sales of nursery products growing relative to the number of nursery farms, average sales per farm also grew through 2002 then jumped significantly in 2007 when total sales increased, and farm numbers decreased. However, a significant decrease in total sales with a small decrease in the number of farms in 2012 resulted in average sales returning to 2002 levels. Finally, with a loss of 632 farms between 2012 and 2017 and rebounding total sales, average sales reached an all-time high of \$1.06 million per farm in 2017. A similar pattern of growth is shown for the average value of land and buildings and the average value of

machinery and equipment, although average values in 2017 remained below 2012 levels.

The average age of the principal operator of California nursery and floriculture farms increased from 51.5 years in 1987 to 58.9 years in 2012 and ended at 56.8 years in 2017. This pattern is similar to the average for all California farms, where average age increased from 53.6 years in 1987 to 60.1 years in 2012, and then decreased to 59.2 years in 2017.

The legal structure of California nursery operations has also changed over time. The distribution of nursery farms by legal organization in 1982 was sole proprietors, 61 percent; partnerships, 14 percent; corporations, 24 percent; and other, 1 percent.<sup>1</sup> In 1997, this had changed to sole proprietors, 69 percent; partnerships, 11 percent; corporations, 18 percent; and other, 2 percent. In the 2007 census, the legal structure was sole proprietors, 67 percent; partnerships, 9 percent; corporations, 22 percent; and

<sup>1</sup> "Other" category includes cooperatives, estates and trusts, institutions, etc.

**Table 12.1. Selected Characteristics of California Nursery and Floriculture Farms, 1987–2017**

Selected Characteristics	Census Year						
	1987	1992	1997	2002	2007	2012	2017
Number of Farms	2,993	3,319	4,285	4,388	3,549	3,390	2,758
Total Sales (\$ Billions)	1.413	1.662	2.211	3.287	3.647	2.514	2.934
Average Sales (\$/farm)	470,816	495,688	513,761	756,416	1,025,524	741,489	1,063,928
Average Acres per Farm	45	54	45	50	52	90	50
Average Value of Land & Buildings (\$/farm)	612,352	742,937	624,267	866,017	1,995,792	1,133,108	1,760,990
Average Value of Machinery & Equipment (\$/farm)	70,580	86,284	82,328	101,289	153,103	114,973	133,323
Average Age of Operator	51.5	52.3	54.0	54.8	56.3	58.9	56.8

Source: USDA, Census of Agriculture for each census year

other, 2 percent. The most recent census (2017) reported sole proprietors, 62 percent; partnerships, 9 percent; corporations, 26 percent; and other, 3 percent. The share of corporations that were family-owned remained relatively constant at 81 percent in 1982 and 84 percent in 2017. Note that the corporate share of farms is larger for nursery farms (26 percent) than for any other sector in California agriculture, with corporations accounting for 10.3 percent of all California farms. Nursery and floriculture farms accounted for just 3.9 percent of all California farms in 2017, while at the same time accounting for 9.8 percent of all California farm corporations.

The California floral and nursery sector's ties to the real estate industry and the unique nature of its crops

contributed to uninterrupted sales growth between 1993 and 2007. This growth continued in spite of major challenges presented by shipping restrictions related to pests and diseases, increased competition from imported flowers, the impact of increased energy costs on production and transportation, limited and expensive water supplies, and less than ideal weather conditions. The effects of the 2007 "burst" of the "housing bubble" and the economic recession impacted much of California agriculture and particularly nursery and floral products. Then, just as sales began to recover in 2012, the effects of California's drought hit. The continuing effects of recession and the drought are evident throughout the industry, ranging from the sales of plants and material to structural aspects of wholesale and retail product distribution.

**Table 12.2. California Gross Value of Production of Nursery, Flowers, and Foliage in 2014 through 2017, Top 15 Counties in 2017 with 2017 Share of State Total**

	Value of Production				Share of State Total
	2014	2015	2016	2017	2017
Top 15 Counties	(\$ Thousands)				Percent
San Diego	1,182,614	1,146,814	1,233,942	1,232,557	32.19
Stanislaus	286,577	313,689	276,423	271,049	7.08
Monterey	228,114	244,339	254,882	256,102	6.69
Ventura	138,884	169,887	204,797	247,873	6.47
Santa Barbara	196,271	195,881	160,268	190,985	4.99
Riverside	172,910	158,648	150,426	153,749	4.01
Siskiyou	155,666	149,580	140,085	138,968	3.63
San Joaquin	62,725	46,773	116,186	117,294	3.06
Kern	96,396	104,820	107,387	113,705	2.97
San Mateo	93,776	83,274	102,318	102,770	2.68
Los Angeles	119,238	94,954	97,922	90,840	2.37
Santa Cruz	119,690	119,120	93,612	84,375	2.20
Santa Clara	133,576	92,399	92,399	82,951	2.17
San Luis Obispo	84,394	100,138	86,933	82,802	2.16
Tulare	78,396	67,635	83,292	72,141	1.88
<b>Top 15 County Total</b>	<b>3,149,227</b>	<b>3,087,951</b>	<b>3,200,872</b>	<b>3,238,161</b>	<b>84.56</b>
<b>Rest of State</b>	<b>516,351</b>	<b>524,099</b>	<b>605,402</b>	<b>591,238</b>	<b>15.44</b>

Source: California County Agricultural Commissioners' Reports, 2012–2017

## LOCATION OF PRODUCTION

Nursery and flower production occurs throughout California, but is mostly concentrated in Central Coast and South Coast counties.<sup>2</sup> Among the 15 California counties with the largest nursery, flower, and foliage production in 2017, there were 10 counties with over \$100 million of production. As shown in Table 12.2, San Diego County dominated with 32.2 percent of total state production in 2017. The next five counties—Stanislaus, Monterey, Ventura, Santa Barbara, and Riverside—combined for 29.2 percent of total California production. The remaining nine of the top 15 counties accounted for 23.1 percent of production. Eight of the 15 largest-producing counties border the Pacific Ocean, and Santa Clara County has a coastal climate. Among the four Central Valley counties (Stanislaus, San Joaquin, Kern, Tulare), three had an annual production of over \$100,000 during at least one of the four years. The ten counties with production over \$100 million in 2017 accounted for \$2.83 billion (73.8 percent) of California's 2017 nursery, flower, and foliage production. There were five counties with nursery, flower, and foliage production in the range of \$72 to \$100 million. They accounted for 10.8 percent of total 2017 production. Overall, 15 counties produced 84.6 percent of California's total 2017 nursery, flower, and foliage crops. Among all crops grown in these top 15 counties, nursery and floral crops ranked No. 1 in value of production in San Diego, Los Angeles, San Mateo, and Santa Clara counties.

Nursery and flower producers continue to be located in the most urbanized areas of the state. The climatic conditions favorable for nurseries are also very attractive to people, and population and housing growth have been high in areas where nurseries have traditionally located. There were nine California counties with a population exceeding 1 million persons in 2017. Five of these counties (Los Angeles, Orange, San Diego, Santa Clara, and Riverside) were among the largest nursery and flower producers

(Appendix Table 12.1A), and have a combined population of 21.07 million. The 15 largest nursery- and flower-producing counties have a population of 23.14 million and accounted for almost 58.6 percent of California's 2017 population. The proximity of nursery and floral production to urban population centers has advantages and disadvantages. Short distribution channels tend to have comparatively low transportation costs while providing a fresh and quality product. Many nurseries distribute their product directly to retailers, and some also integrate into retailing. However, other costs, such as water and land, are comparatively high. An important consideration for urban locations, given the recent economic issues facing the industry, is that the land resource can easily and quickly shift to other uses. Thus, it may be very difficult to re-establish an urban nursery, once closed.

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<sup>2</sup> The gross value of nursery, flower, and foliage production by county is in Appendix Table 12.1A. Note that the County Agricultural Commissioners' Reports do not include nursery and flower sales for four counties that do have producers listed in the CDFA Directory, Nurserymen and Others Licensed to Sell Nursery Stock in California available July 2013 (<http://plant.cdfa.ca.gov/nurserylicense/nlmenu.asp>). These counties and the number of producers include (1) Colusa, (2) Kings, (3) Mono, and (4) Plumas.

## CROPS PRODUCED

The wholesale value of California nursery, flower, and foliage production during 2017 totaled almost \$3.83 billion (Table 12.3). Of the total value, floral products contributed \$423.3 million, while nursery production during the same period was just over \$3.4 billion. Nursery, flower and foliage producers market a wide variety of plant materials ranging from cut flowers, potted flowering plants, flower seeds, bedding and garden plants, bulbs, and ornamentals to fruit and nut trees and strawberry plants. Buyers include consumers, landscape contractors, institutions, and agricultural producers. The most recent data available indicate that the largest wholesale value of plant materials produced by the California nursery, flower, and foliage industry totaled \$3.98 billion in 2008 (Table 12.3). Table 12.3 shows values for the various categories of nursery products for the fiscal years ending in 2001, 2008, and 2017. Comparable data for the entire period of 2001 through 2017 are available in Appendix Table 12.2A.

The product categories used by the CDFA Nursery Program and shown in Table 12.3 differ from those reported in annual *California Agricultural Statistics Reports* and *California County Agricultural Commissioners' Reports*. Briefly, the latter two reports include a category for flowers and foliage that includes more products than does the Floral Products Total in Table 12.3. A comparison for 2017 has the floral products total in Table 12.3 equal to \$423,345,000, while the Flowers and Foliage category in *California Agricultural Statistics* reports a value of \$774,407,000. The annual total of nursery products and floral and flower products for the two data series are similar in magnitude, but they tend to differ slightly from year to year.

There is a considerable range of wholesale values for the 12 categories of floral and nursery products included in Table 12.3. There are other important differences, including the pattern of changing values over time, variation in customers and target markets, and factors affecting values for each category. Using column 2017 values, the largest five categories account for a value of almost \$3.68 billion or 96 percent of the 2017 total.

These categories and their percentage of total 2017 wholesale value are: cut flowers and cut greens, 10.8 percent; potted plants, 16.3 percent; bedding plants, 10.9 percent; ornamentals, 24.7 percent; and nursery stock 33.3 percent. The other seven categories of floral and nursery products individually range from \$4.7 to \$53.5 million and have a combined total of just \$150.36 million (4 percent). The wholesale value of California-produced floral products reached a maximum of \$521.46 million in 2007 while the maximum wholesale value of nursery products (\$3.46 billion) and the high of combined floral and nursery wholesale value of \$3.98 billion occurred in 2008. While seven of the product categories had higher wholesale values in 2008 than in 2001, only four (cut flowers and cut greens, potted plants and flowering foliage, ornamentals, and nursery stock) had higher values in 2017 than in 2001. Overall, the total wholesale value of California nursery and floral products increased 23.6 percent from 2001 to 2017.

## TOTAL SALES TRENDS

The California floral and nursery industry reports total wholesale value and total sales data, but separate observations for price and quantity for the various product categories are not available. Total wholesale value and total sales data are reported for California floral and nursery products but separate observations for price and quantity for the various product categories are not available. Because of this data shortfall, there are no quantitative estimates of supply and demand parameters available. There are no estimates for price elasticity of demand and underlying determinants for observed changes in total sales revenues are unknown.

Given that there are a variety of market segments for the 12 product categories in Table 12.3, one would expect the sales impact of different factors to vary by product. For example, one would expect a significant portion of sales for cut flowers and cut greens are to consumers in retail outlets, while sales of a product such as turf and sod are mainly to landscapers and other installers. While incomes or expected incomes are likely a factor in sales of all floral and nursery products, other factors such as housing

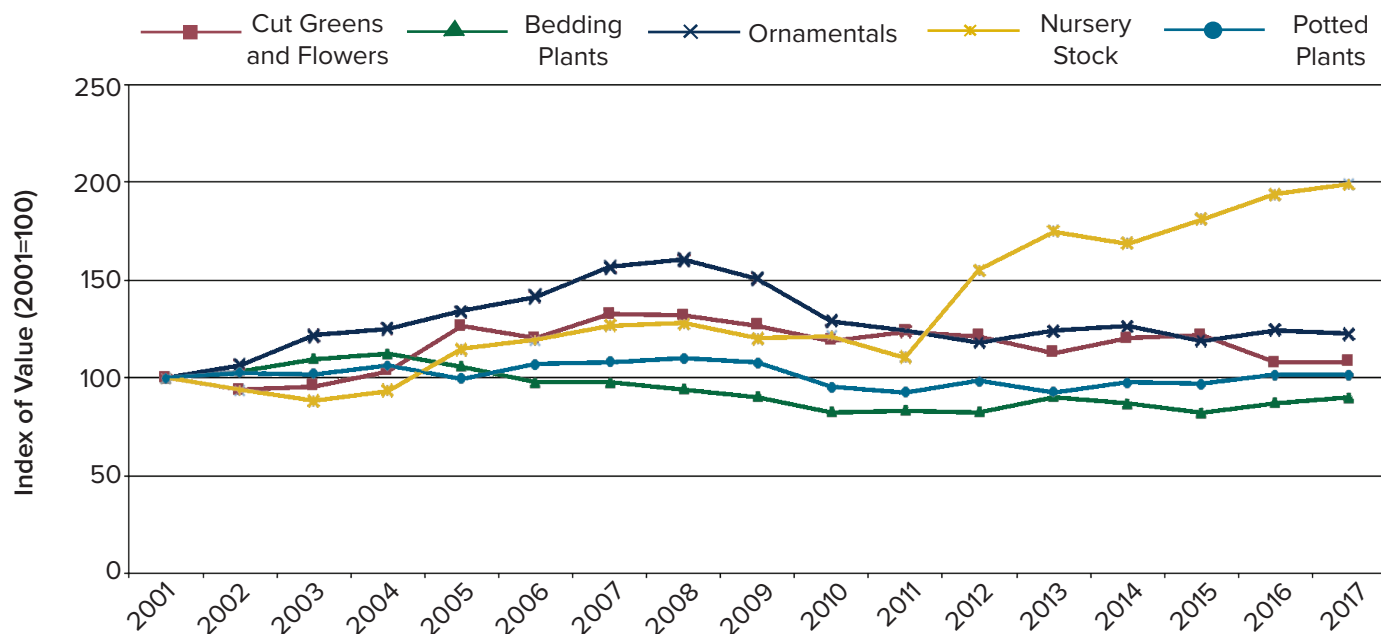


Table 12.3. Wholesale Value of California Floral and Nursery Products by Major Categories, 2001, 2008, and 2017

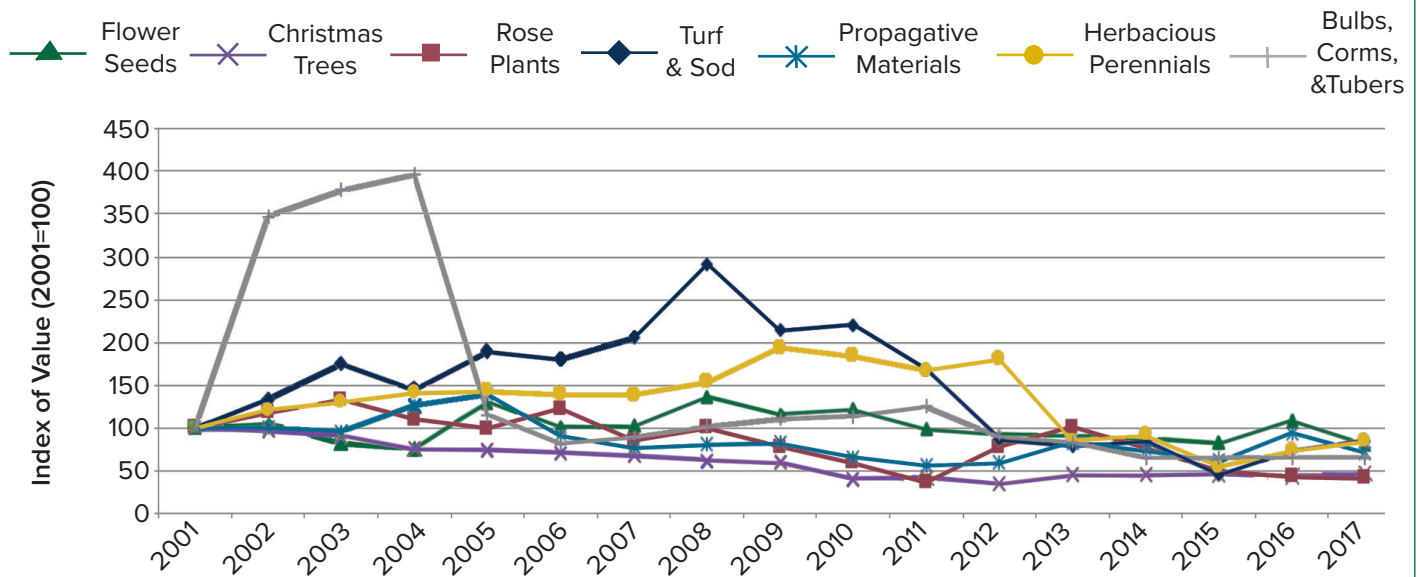
Floral Products	2001 Value	2008 Value	2017 Value
(\$ Thousands)			
Cut Flowers and Cut Greens	383,102	505,036	413,709
Flower Seeds	5,831	7,932	4,682
Christmas Trees	10,686	6,547	4,954
<b>Floral Products Total</b>	<b>399,618</b>	<b>519,515</b>	<b>423,345</b>
<b>Nursery Products</b>			
Potted Plants and Flowering Foliage	615,772	677,820	624,911
Bulbs, Corm, Roots and Tubers	10,295	10,456	6,737
Flowering Propagative Materials	75,590	61,012	53,517
Bedding Plants	465,045	438,602	418,810
Rose Plants	45,936	45,704	18,903
Woody, Deciduous and Evergreen Ornamentals	772,006	1,239,919	947,101
Herbaceous Perennials	30,069	46,135	25,270
Turf and Sod	42,750	124,708	36,298
Nursery Stock Other than Ornamentals	639,509	817,324	1,273,956
<b>Nursery Products Total</b>	<b>2,696,974</b>	<b>3,461,678</b>	<b>3,405,503</b>
<b>Grand Total</b>	<b>3,096,592</b>	<b>3,981,193</b>	<b>3,828,848</b>

Sources: California Department of Food and Agriculture *Value of Nursery Products*, Fiscal Year; CDFA Nursery Program, Nursery Advisory No.01-2002, Nursery Advisory No. 01-2009, January 16, 2009, and Nursery Advisory No. 01-2019, April 30, 2019

Figure 12.3. Index of Total Wholesale Value by Crop, 2001–2017



Sources: California Department of Food and Agriculture *Value of Nursery Products*, Fiscal Year; CDFA Nursery Program, Nursery Advisory, Annual Issues

**Figure 12.4. Index of Annual Total Wholesale Value by Crop, 2001–2017**

Sources: California Department of Food and Agriculture *Value of Nursery Products*, Fiscal Year; CDFA Nursery Program, Nursery Advisory, Annual Issues

Note: This figure includes seven floral and nursery crop categories with the smallest annual sales.

starts, expected prices for fruit and tree nut crops, rainfall, drought, plant disease, energy prices, and other major input costs may also be important. A brief examination of sales trends for each of the product categories indicates that the factors listed above have differential impacts.

In Table 12.3, for the years 2001 through 2017, we calculate an index of annual sales for each floral and nursery crop using 2001 as the base year (2001=100). Figure 12.3 shows the values of the index for the five crop categories with largest wholesale values (sales). The sales trends differ for each of the five products, with nursery stock exhibiting the largest divergence. Most of the nursery stock sells to producers for replacement or new plantings of fruit and tree nut acreage, and most of the production is under contract between the nursery and buyer. 2017 nursery stock sales are 1.99 times greater than in 2001, which is due to recent acreage expansions for tree nuts (almonds, walnuts, and pistachios).

Figure 12.4 illustrates sales indexes for the seven floral and nursery crop categories with the smallest annual sales. While the 16-year pattern of sales differs for each product, all of the products ended the 16-year period with fewer sales than in 2001. Christmas tree sales had a strong downward trend from 2001, having only 34.5 percent of beginning sales in 2012 before recovering slightly to 46.4

percent of 2001 sales in 2017. Turf and sod sales increased almost three-fold to 2008 and then decreased steadily to only 42.5 percent of beginning sales in 2015 before recovering to 84.9 percent of 2001 sales in 2017. California's housing collapse, the recession, several cities' programs that paid homeowners to remove grass lawns, and increased water charges are probably related to decreased sales of turf and sod products. Sales for most of the products decreased after the recession officially began in 2008, although herbaceous perennials' sales increased and remained high from 2009 through 2012 before collapsing from 2013 to 2017. Flower seeds sales decreased from their 2008 high of 1.36 times their 2001 level to 80.3 percent of their 2001 level in 2017. Each of the other minor crops ended 2017 with lower sales relative to 2001 sales.

## RETAIL SALES

The channels of distribution for California floral and nursery production tend to be short and direct, with many nurseries having outlets on-premise to serve retail customers. Direct sales to landscape contractors and gardeners purchasing products ranging from specimen trees to bedding plants, and agricultural producers purchasing trees and strawberry plants, are also important. California is the largest market for lawn and garden products in the U.S., accounting for about 10 percent of annual retail sales. The majority of California floral and nursery production sells in California, with the distribution of sales varying by product. A survey of California flower growers conducted in 2000 found that 59 percent of California-produced flowers were sold in California, 40 percent were shipped to other states, and 1 percent were exported to other countries (Prince and Prince, 2000). The spatial distribution of California nursery product sales, based on industry estimates, is approximately 79 percent in

California, 20 percent shipped to other states, and 1 percent exported to other countries.

Partial data on retail floral and nursery product sales in California are available from government statistics. The California State Board of Equalization publishes sales data by type of retail outlet but not by product line. There are annual retail sales data for florists and farm and garden supply stores, two types of stores that tend to specialize in floral and nursery products. The Board of Equalization revised their "type of business" classification in 2009 from the Standard Industrial Classification (SIC) to the North American Industry Classification System's (NAICS) classifications. Farm and garden supply stores became "lawn and garden equipment and supplies stores" while florists continued as "florists." There are also aggregate sales data for large multi-product retailers such as food stores, hardware stores, and general merchandise. Still, it

**Table 12.4. Statewide Taxable Sales by California Retail Florists and Farm and Garden Supply Stores, 2000–2018**

Year	Florists	Farm and Garden	Total	Change from Prior Year
	(\$ Thousands)			Percent Change
2000	983,396	2,060,713	3,042,436	5.52
2001	988,022	2,059,040	3,047,062	0.15
2002	998,781	2,135,472	3,134,253	2.86
2003	1,005,452	2,266,142	3,271,594	4.38
2004	1,077,694	2,386,377	3,464,071	5.88
2005	1,133,896	2,662,956	3,796,852	9.61
2006	1,172,658	2,930,230	4,102,888	8.06
2007	1,203,148	2,965,697	4,168,845	1.61
2008	793,882	2,751,233	3,545,115	-14.96
2009	461,349	2,216,767	2,678,116	-24.46
2010	449,893	2,269,297	2,719,190	1.53
2011	464,761	2,392,542	2,857,303	5.08
2012	484,517	2,492,977	2,977,494	4.21
2013	493,526	2,732,246	3,225,772	8.34
2014	537,808	2,857,008	3,394,816	5.24
2015	557,740	3,174,133	3,731,873	9.93
2016	568,050	3,367,663	3,935,713	5.46
2017	594,779	3,492,113	4,086,892	3.84
2018	578,379	3,420,648	3,999,027	-2.15

Source: California State Board of Equalization, Annual Reports

is not possible to determine the share of floral and nursery product sales for each of these retail store categories. Table 12.4. shows taxable retail sales reported by California florists and farm and garden supply stores for the 19-year period 2000 through 2018. Note that combined sales for the two types of stores increased from \$3.04 billion in 2000 to almost \$4.17 billion in 2007. The steady sales increase was interrupted in 2008 when total sales for the two types of outlets dropped almost 15 percent to \$3.55 billion. Then, 2009 total sales for florists and farm and garden stores were down another 24.5 percent to \$2.68 billion, a total that was below the 2000 level. Retail sales then increased slightly in 2010, with the sales increase for farm and garden stores offsetting the loss for florists. Total sales for both types of retailers then increased annually through 2017 before decreasing 2.15 percent in 2018.

Changes in store numbers and average annual sales for California florists between 2000 and 2011 are dramatic (Table 12.5). The number of California florists increased from 5,161 in 2000 to a peak of 6,427 in 2008 (24.5 percent), with store numbers increasing in 2008 even as sales began to plunge. Annual florists' sales decreased over 34 percent from 2007 to 2008, 41.9 percent from 2008 to 2009, and another 2.5 percent from 2009 to 2010. Total sales by California florists in 2010 were only 37.4 percent of their level just three years earlier in 2007. Large numbers of florists began closing in 2008, decreasing 25.3 percent by 2011 (from 6,427 in 2008 to 4,798 in 2011). Average sales per florist were highest in 2006, a year before total sales peaked in 2007; average sales then began to increase as the number of florists continued to decrease, and total sales increased. Sales per florist took a dive in 2015 with a surprising 44 percent increase in store numbers overwhelming the 3.7 percent increase in total sales (Table 12.5). The number of florists continued to increase, reaching a high of 7,153 in 2018, with the lowest average sales since 2000.

Sales for California lawn and garden stores increased from just over \$2.06 billion in 2000 to a high of over \$2.96 billion in 2007. They then decreased over 25.2 percent the next two years before increasing slightly in 2010 (Table 12.5). However, the number of stores increased each year from 2000–2011. Average sales per farm and garden store reached a high in 2006 and then decreased to a low in 2010 before increasing slightly in 2011. Total sales for lawn and garden stores increased steadily from 2010 through 2017,

reaching a high of \$3.49 billion in 2017, before decreasing slightly to \$3.42 billion in 2018. Sales per store increased through 2014 but then dropped sharply when the number of stores increased from 4,977 in 2014 to 6,564 in 2015—a 31.9 percent, one-year increase in store numbers. Increased total sales with stabilization of store numbers from 2016–2018 resulted in average sales per store in a range of \$517,465 to \$529,993.

## FIRMS LICENSED TO SELL NURSERY PRODUCTS

Firms must be licensed by the California Department of Food and Agriculture to sell nursery products in California and the annual Directory of Nurserymen and Others Licensed to Sell Nursery Stock in California lists licensed firms. There was a significant reduction in the number of retailers between 2003 and 2011, with a slight recovery in 2013 and again in 2018. There were also less dramatic decreases in the total numbers of middlemen (wholesalers, jobbers, and brokers), as well as landscapers and producers from 2011 to 2013 and continuing to 2018.

The USDA's 2014 *Census of Horticultural Specialties* included all operations that reported producing and selling \$10,000 or more of horticultural specialty products. The census counted a total of 23,221 operations in the U.S., and 1,710 (7.36 percent) of these were in California. U.S. sales were \$13.79 billion, with California operations accounting for 20.87 percent of the total. The average California horticultural specialty crop producer had 2014 sales of \$1,683,030 as compared to the U.S. average of \$593,818. The census reported wholesale and retail sales by California firms. Among the total 1,710 firms, 1,306 reported wholesale sales of \$2.625 billion for average wholesale sales of \$2,010,487 per operation. There were 835 operations with \$252 million in retail sales for an average retail sales of \$302,139 per firm. From total sales of \$2.878 billion, 91.2 percent were at wholesale, and the remaining 8.8 percent were retail.

Comparison of the 2009 and 2014 *Census of Horticultural Specialties* indicates that the number of U.S. producers with annual sales over \$10,000 increased from 21,585 in 2009 to 23,221 in 2014 (7.6 percent), while total sales increased from \$11.687 billion to \$13.789 billion (18 percent). The same comparison for California indicates that the total number of producers increased from 1,611 in 2009 to 1,710 in 2014 (6.1 percent), while total sales increased from \$2.283 billion to \$2.878 billion (26.1 percent).



**Table 12.5. Number of Retailers and Average Sales per Retailer, California Florists and Farm and Garden Retailers, 2000–2018**

Year	Florists			Farm and Garden Stores		
	Number*	Sales (\$1,000)	Sales per Florist (\$)	Number*	Sales (\$1,000)	Sales per Store (\$)
2000	5,161	983,396	190,544	3,601	2,060,713	572,261
2001	5,338	988,022	185,092	3,711	2,059,040	554,848
2002	5,474	998,781	182,459	3,834	2,135,472	556,983
2003	5,572	1,005,452	180,447	3,943	2,266,142	574,725
2004	5,703	1,077,694	188,970	4,061	2,386,377	587,633
2005	5,708	1,133,896	198,650	4,188	2,662,956	635,854
2006	5,825	1,172,658	201,315	4,188	2,930,230	699,673
2007	6,160	1,203,148	195,316	4,285	2,965,697	692,111
2008	6,427	793,882	123,523	4,715	2,751,233	583,506
2009	5,070	461,349	90,996	5,133	2,216,767	431,866
2010	4,950	449,893	90,887	5,427	2,269,297	418,149
2011	4,798	464,761	96,866	5,600	2,392,542	427,240
2012	4,779	484,517	101,385	5,557	2,492,977	448,619
2013	4,606	493,526	107,149	5,204	2,732,246	525,028
2014	4,504	537,808	119,407	4,977	2,857,008	574,042
2015	6,487	557,740	85,978	6,564	3,174,133	483,567
2016	6,670	568,050	85,165	6,508	3,367,663	517,465
2017	6,741	594,779	88,233	6,589	3,492,122	529,993
2018	7,153	578,379	80,858	6,563	3,420,648	521,202

Source: California State Board of Equalization. Taxable Sales in California, 2000–2018

Note: \*Number of licenses, July 1 of each year.

**Table 12.6. Number of California Firms Licensed to Sell Nursery Stock by Category and Total, 2003, 2011, 2013, and 2018**

Year	Cut Flowers & Greens Wholesalers	Jobbers & Brokers	Landscapers	Producers*	Incidental Retailers**	Retailers***	Total
2003	853	476	454	2,999	2,715	3,756	9,821
2011	880	460	463	2,959	736	2,158	5,848
2013	854	447	421	2,833	842	2,180	5,834
2018	798	409	426	2,790	848	2,270	5,674

Source: CDFA, Directory of Nurserymen and Others Licensed to Sell Nursery Stock in CA. To source directory: <http://plant.cdfa.ca.gov/nurserylicense/nlmenu.asp>

Notes: \*A producer is a commercial producer who grows and sells a total of \$1,000 or more of nursery stock in one year.

\*\*An incidental retailer is an operator of a retail sales outlet for nursery stock that is handled incidental to other merchandise. Retailers such as Home Depot, Wal-Mart, Lowes and supermarkets are in this category.

\*\*\*A retailer is an operator of a sales outlet that has no growing grounds except small areas devoted to the production of plants for local distribution and those producing less than \$1,000.

## STRUCTURAL CHANGES

Since 1992, there are changes in the number of California nursery and floricultural producers, changes in sales per firm and industry sales, and changes in the share of total California agricultural sales. The number of California farms producing nursery and floricultural products grew to a high of 4,388 in 2002 (Table 12.1). Nursery and floral sales reached 10.5 percent of total California agricultural sales in 1998, increased to a high of 12.5 percent in 2002 and remained above 10 percent through 2007. The highest combined nursery and floral sales occurred in 2007, when sales totaled \$4 billion, accounting for 10.9 percent of total California agricultural sales. Nursery and floricultural sales as a share of total agricultural sales decreased to 6.2 percent in 2014 before recovering slightly in 2015.

Retail sales for California florists and lawn and garden stores also peaked during 2007, with total retail sales of almost \$4.17 billion (Table 12.4). Then, with the onset of the economic recession in 2008, retail sales for florists and lawn and garden stores plunged over 14.9 percent in 2008 and another 24.5 percent in 2009, reaching a low of almost \$2.68 billion. While total retail sales began to increase slowly in 2010, a total of nearly \$4 billion in 2017 was still well below the 2007 peak.

The impacts of the economic recession on the number of firms producing and marketing California nursery and floral products point to some rather basic structural changes, with implications for both producers and consumers. First, is the sharp reduction in the number of California florists and their total sales associated with the recession. The number of florists in 2011 dropped 1,629 (25.3 percent) from the peak of 6,427 in 2008, while sales decreased \$753.26 million (62.6 percent) from 2007 to 2010. The change in farm sales of floral products was much less dramatic. California farm-level floral product sales reached a high of \$1.036 billion in 2007. Sales then dropped to \$1.015 billion in 2008 and further to \$937 million in 2009, before recovering to \$1.015 billion in 2010. The large decrease in sales by florists with only a small change in farm-level sales is presumed to be due to a significant change in retail market shares for floral products. Specifically, other outlets, such as supermarkets,

gained market share for floral products at the expense of individual florists.

The situation for lawn and garden equipment and supplies stores is different. While total sales decreased after the peak occurring in 2007, the number of retail licenses continued to increase throughout the recession, reaching 5,600 in 2011 (Table 12.5). This is not the case for other retailers handling nursery products, as reported by CDFA. As shown in Table 12.6, there were fewer licensed producers (including some with direct sales to consumers) as well as incidental and specialized nursery retailers in 2011 as compared to 2003. The number of retailers licensed to sell nursery stock decreased from a total of 6,471 in 2003 to 2,894 in 2011 (55.3 percent) before increasing to 3,022 in 2013 and 3,118 in 2018. Given much smaller reductions in wholesale as compared to retail sales, the surviving retailers are larger on average and probably have smaller operating margins than was typical for either specialized florists or lawn and garden retailers.

Surges in the number of retail florists and farm and garden stores in 2015 as reported by the California State Board of Equalization show the number of retail florists increased from 4,504 in 2014 to 6,487 in 2015 (44 percent) while the number of farm and garden stores grew from 4,977 to 6,564 (31.9 percent). As reported by CDFA, the number of licensed retailers increased only by 96 (3.2 percent) between 2013 and 2018. The difference in the number of sales tax licenses and the number of CDFA licenses is significant. The best explanation is that most of the new sales tax licenses are to retailers who sell only cut flowers and greens and plants used indoor and are not required to be licensed by CDFA. There could also be some new entrants that are not familiar with CDFA licensing requirements and have not applied for the required licenses.

This very significant reduction in licensed California retailers handling nursery and floral products has implications for both producers and consumers. Some producers undoubtedly lost their major retail customers, while many lost important retail outlets. The impact of the loss of outlets was not uniform, but it was widespread. Products

are not as widely available at the consumer level as before the recession, which tends to reduce consumer choice and negatively impact impulse buying. This consolidation of outlets may offer some economies in distribution but the impact on floral and nursery product sales has been negative. A change from specialized to multi-product retailers tends to reduce customer service and may reduce product assortments. And, the changes noted may be associated with more market power in the hands of surviving retailers. Recent increases in the number of retail outlets should have a positive effect on production and sales, especially for cut flowers and greens.

## REFERENCES

- California Department of Finance. 2017. *E-1 Population Estimates for Cities, Counties and the State – January 1, 2016 and 2017*. Sacramento, CA, May. Available at: <https://bit.ly/37mgywg>.
- California Department of Food and Agriculture. Various Years. *Value of Nursery Products, Fiscal Year*. Sacramento, CA: CDFA Nursery Program, Nursery Advisory.
- . No Date. "Directory of Licensed Nurseries." Available at: <http://bit.ly/3bv0HxT>.
- California Department of Food and Agriculture, National Agricultural Statistics Service (NASS). 2000–2017. *California County Agricultural Commissioners' Reports*. Available at: <http://bit.ly/34g5XRq>.
- California State Board of Equalization. 2000–2018. *Taxable Sales in California Annual Report*. Sacramento, CA. 2000–2015. Available at: <http://bit.ly/3oeCCyK>.
- Carman, H.F. and A. M. Rodriguez. 2004. "Economic Contributions of the California Nursery Industry." *Giannini Foundation Information Series* No. 04-1, July. Berkeley, CA: University of California Agricultural Experiment Station. Available at: <https://bit.ly/3nmLNN9>.
- Carman, H.F. 2011. "Economic Aspects of the California Nursery and Floral Industry, 2001–2009." *Giannini Foundation Information Series* No. 11-1, December. Berkeley: University of California Agricultural Experiment Station. Available at: <https://bit.ly/3mqPQGI>.
- . 2013. "Some Impacts of Recession on California's Nursery and Floral Industry." *ARE Update* 16(5): 9-11. University of California Giannini Foundation of Agricultural Economics. Available at: <https://bit.ly/39y6tff>.
- Morey, J. 2004. "Market Share Report, 2004." *Nursery Retailer*, January/February, pp. 81-85.
- Prince & Prince, Inc. 2000. *California Cut-Flower Production and Industry Trends 2000: A State-Wide Survey of Cut-Flower Growers*. Marketing Research Report, June. Columbus, OH.
- U.S. Department of Agriculture, NASS, California Field Office. 2003–2016. *California Agricultural Statistics, Annual Issues*. Sacramento, CA. Available at: <http://bit.ly/38b6cOI>.
- U.S. Department of Agriculture, NASS. 2007. *Census of Agriculture 2007, California State and County Data, Vol. 1, Geographic Area Series, Part 5*. Washington, D.C., February. Available at: <https://bit.ly/2K5ulhC>.
- . 2012. *Census of Agriculture 2012, California State and County Data, Volume 1, Chapter 2: County Level Data, Table 44*. Washington, D.C. Available at: <http://bit.ly/2IUB79y>.
- . 2014. *Census of Horticultural Specialties*. Washington, D.C. Available at: <http://bit.ly/3nmSU7x>.
- . 2017. *Census of Agriculture 2017, California State and County Data, Vol. 1, Chapter 2: County Level Data, Table 44*. Available at: <https://bit.ly/2LANHeZ>.



## APPENDIX

Appendix Table 12.1A. Population, Value of Nursery and Floral Production, and Number of Greenhouse, Nursery, and Floriculture Producers by California County, 2017

County	Population Jan. 1, 2017	Value of Nursery Product (\$1,000)	Number of Farms 2017	County	Population Jan. 1, 2017	Value of Nursery Product (\$1,000)	Number of Farms 2017
Alameda	1,645,359	7,256	17	Orange	3,194,024	61,670	53
Alpine	1,151	0	0	Placer	382,837	8,643	54
Amador	38,382	218	9	Plumas	19,819	13	6
Butte	226,404	14,399	29	Riverside	2,384,783	153,749	178
Calaveras	45,168	259	14	Sacramento	1,514,770	32,182	25
Colusa	22,043	0	3	San Benito	56,854	7,686	14
Contra Costa	1,139,513	8,717	17	San Bernardino	2,160,256	51,441	68
Del Norte	27,124	10,237	8	San Diego	3,316,192	1,232,557	604
El Dorado	185,062	5,284	104	San Francisco	874,228	0	3
Fresno	995,975	38,247	79	San Joaquin	746,868	117,294	33
Glenn	28,731	7,017	2	S.Luis Obispo	280,101	82,802	73
Humboldt	136,953	55,945	68	San Mateo	770,203	102,770	51
Imperial	188,334	7,682	8	Santa Barbara	450,663	190,985	106
Inyo	18,619	1,185	0	Santa Clara	1,938,180	82,951	68
Kern	895,112	113,705	25	Santa Cruz	276,603	84,375	108
Kings	149,537	0	5	Shasta	178,605	12,181	16
Lake	64,945	925	15	Sierra	3,207	4	1
Lassen	30,918	36	3	Siskiyou	44,688	138,968	26
Los Angeles	10,241,278	90,840	210	Solano	436,023	44,627	16
Madera	156,492	29,382	4	Sonoma	505,120	35,411	145
Marin	263,604	243	19	Stanislaus	548,057	271,049	21
Mariposa	18,148	69	3	Sutter	96,956	47,350	20
Mendocino	89,134	1,577	44	Tehama	63,995	23,293	6
Merced	274,665	57,648	13	Trinity	13,628	4	15
Modoc	9,580	0	6	Tulare	471,842	72,141	38
Mono	13,713	20	1	Tuolumne	54,707	138	25
Monterey	442,365	256,102	60	Ventura	857,386	247,873	130
Napa	142,408	652	5	Yolo	218,896	19,068	19
Nevada	98,828	531	58	Yuba	74,577	0	7
				STATE	39,523,613	3,829,399	2,758

Sources: Population data are from State of California, Department of Finance, Report E-1, Population Estimates for Cities, Counties and the State, January 1, 2016 and 2017. Sacramento, CA, May, 2017; Nursery and floral production from California Department of Food and Agriculture, California County Agricultural Commissioners' Reports, Crop Year 2016-2017, December 28, 2018; Number of greenhouse, nursery and floriculture producers from USDA, NASS, Census of Agriculture 2017, California State and County Data, Vol. 1, Chapter 2: County Level Data, Table 44

Appendix Table 12.2A. Annual Value of California Nursery Products by Category, 2001–2017

Year	Cut Flowers & Cut Greens	Flower Seeds	Xmas Trees	Total Floral Products
Annual Value (\$ Thousands)*				
2001	383,102	5,831	10,686	399,618
2002	359,811	6,074	10,305	376,190
2003	365,945	4,776	9,637	380,358
2004	396,748	4,380	7,975	409,103
2005	484,151	7,556	7,918	499,625
2006	460,419	5,862	7,507	473,788
2007	508,274	5,955	7,234	521,463
2008	505,036	7,932	6,547	519,515
2009	485,608	6,704	6,256	498,568
2010	456,493	7,086	4,3112	467,891
2011	473,513	5,737	4,442	483,691
2012	464,287	5,335	3,6823	473,305
2013	431,942	5,303	4,728	441,973
2014	459,813	5,084	4,742	469,638
2015	465,6901	4,779	4,829	475,299
2016	412,324	6,316	4,662	423,303
2017	413,709	4,682	4,954	423,345

Year	Potted Plants & Flowering Foliage	Bulbs,Corms, Roots, and Tubers	Flowering Propagative Materials	Bedding Plants	Rose Plants	Woody, Deciduous, and Evergreen Ornamentals
Annual Value (\$ Thousands)*						
2001	615,772	10,295	75,590	465,045	45,936	772,006
2002	631,386	35,712	75,701	480,438	54,062	823,256
2003	628,213	38,962	71,9767	509,310	61,047	940,436
2004	654,605	40,750	94,934	522,660	50,558	966,152
2005	612,803	11,830	105,047	492,449	45,353	1,035,598
2006	658,588	8,330	68,870	453,665	56,251	1,092,487
2007	665,904	9,090	57,931	454,220	38,982	1,208,605
2008	677,820	10,4556	61,012	438,602	45,704	1,239,919
2009	663,093	11,415	62,0856	419,378	35,6278	1,164,761
2010	585,716	11,711	49,170	383,405	27,201	996,500
2011	569,480	12,842	42,206	387,885	16,600	956,878
2012	604,840	9,127	44,509	384,256	35,621	912,435
2013	569,282	8,508	63,055	420,648	46,367	958,078
2014	601,310	6,701	55,561	403,653	35,444	975,360
2015	595,588	6,701	46,188	381,955	22,970,	918,654
2016	626,110	6,737	70,655	404,916	19,885	960,000
2017	624,911	6,737	53,517	418,810	18,903	947,101

Appendix Table 12.2A. Continued

Year	Herbaceous Perennials	Turf & Sod	Nursery Stock Other than Ornamentals	Total Nursery Products	Total Floriculture and Nursery
Annual Value (\$ Thousands)*					
2001	30,069	42,750	639,509	2,696,974	3,096,592
2002	36,176	56,725	598,607	2,792,062	3,168,252
2003	39,135	74,853	564,753	2,928,685	3,309,043
2004	42,37	61,827	597,499	3,031,353	3,440,456
2005	42,905	80,877	732,811	3,159,671	3,659,297
2006	41,752	76,966	763,397	3,220,305	3,694,093
2007	41,577	87,845	810,579	3,374,731	3,896,194
2008	46,135	124,708	817,324	3,461,678	3,981,193
2009	58,255	91,397	769,332	3,275,344	3,773,912
2010	55,273	94,197	776,989	2,980,161	3,448,052
2011	50,178	72,001	705,552	2,813,621	3,297,313
2012	54,175	37,091	990,779	3,072,833	3,546,138
2013	25,564	33,460	1,117,666	3,242,627	3,684,601
2014	27,277	35,925	1,079,007	3,220,237	3,689,876
2015	16,443	19,303	1,157,518	3,165,319	3,640,617
2016	21,907	31,428	1,240,808	3,382,445	3,805,748
2017	25,270	36,298	1,273,956	3,405,503	3,828,848

Source: California Department of Food and Agriculture *Value of Nursery Products*, Fiscal Year; CDFA Nursery Program, Nursery Advisory. Annual Issues

Note: \*Dollar Values Rounded to Nearest Thousand.

