

# Arboriculture and Tree Climber Specialist Occupations Labor Market Information Report

Prepared by the San Francisco Bay Center of Excellence  
for Labor Market Research  
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## Recommendation

Based on all available data included in this report, there appears to be an undersupply of Arboriculture and Tree Climber Specialist workers compared to the demand for the cluster of occupations selected, in the Bay region and the East Bay sub-region. Both of the programs proposed by Merritt College are preparing students for the same cluster of occupations, therefore the same labor market data is used for both programs. The annual gap between demand and supply is about 530 in the region and about 190 in the East Bay sub-region.

This report also provides student outcomes data on employment and earnings for Horticulture programs (TOP 0109.00) in the region and state. It is recommended that this data be reviewed to better understand how student outcomes for Horticulture programs at colleges in the region and sub-region compare to the state programs in this area as well as outcomes across all programs in the region.

## Introduction

This report profiles Arboriculture and Tree Climber Specialist occupations in the 12 county Bay Region and the East Bay Sub-Region (Alameda and Contra Costa counties) for a new Arboriculture AS degree and a new Tree Climber Specialist Certificate of Achievement at Merritt College. Both programs are preparing students for the same cluster of occupations, therefore the same labor market data is used for both programs.

- **Foresters (SOC 19-1032):** Manage public and private forested lands for economic, recreational, and conservation purposes. May inventory the type, amount, and location of standing timber, appraise the timber's worth, negotiate the purchase, and draw up contracts for procurement. May determine how to conserve wildlife habitats, creek beds, water quality, and soil stability, and how best to comply with environmental regulations. May devise plans for planting and growing new trees, monitor trees for healthy growth, and determine optimal harvesting schedules.  
*Entry-Level Educational Requirement: Bachelor's Degree*  
*Training Requirement: None*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 0%*
- **Pesticide Handlers, Sprayers, and Applicators, Vegetation (SOC 37-3012):** Mix or apply pesticides, herbicides, fungicides, or insecticides through sprays, dusts, vapors, soil incorporation, or chemical application on trees, shrubs, lawns, or botanical crops. Usually requires specific training and State or Federal certification.  
*Entry-Level Educational Requirement: High School Diploma or Equivalent*  
*Training Requirement: Moderate-term-on-the-job training*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 20%*
- **Tree Trimmers and Pruners (SOC 37-3013):** Using sophisticated climbing and rigging techniques, cut away dead or excess branches from trees or shrubs to maintain right-of-way for roads, sidewalks, or utilities, or to improve appearance, health, and value of tree. Prune or treat trees or shrubs using handsaws, hand pruners, clippers, and power pruners. Works off the ground in the tree canopy and may use truck-mounted lifts.  
*Entry-Level Educational Requirement: High School Diploma or Equivalent*

Training Requirement: Short-term-on-the-job training

Percentage of Community College Award Holders or Some Postsecondary Coursework: 20%

- **Forest and Conservation Workers (SOC 45-4011):** Under supervision, perform manual labor necessary to develop, maintain, or protect areas such as forests, forested areas, woodlands, wetlands, and rangelands through such activities as raising and transporting seedlings; combating insects, pests, and diseases harmful to plant life; and building structures to control water, erosion, and leaching of soil. Includes forester aides, seedling pullers, and tree planters.

Entry-Level Educational Requirement: High School Diploma or Equivalent

Training Requirement: Moderate-term-on-the-job training

Percentage of Community College Award Holders or Some Postsecondary Coursework: 28%

- **Fallers (SOC 45-4021):** Use axes or chainsaws to fell trees using knowledge of tree characteristics and cutting techniques to control direction of fall and minimize tree damage.

Entry-Level Educational Requirement: High School Diploma or Equivalent

Training Requirement: Moderate-term-on-the-job training

Percentage of Community College Award Holders or Some Postsecondary Coursework: 16%

## Occupational Demand

**Table 1. Employment Outlook for Arboriculture and Tree Climber Specialist Occupations in Bay Region**

Occupation	Skill Level	2016 Jobs	2021 Jobs	5-Yr Change	5-Yr % Change	5-year Openings	Annual Openings	10% Hrly Wage	Median Hrly Wage
Foresters	Above Middle Skill	153	160	7	5%	73	15	\$23.14	\$37.02
Pesticide Handlers, Sprayers, and Applicators, Vegetation	Middle Skill	1,103	1,176	73	7%	741	148	\$12.86	\$18.74
Tree Trimmers and Pruners	Below Middle Skill	2,917	3,029	112	4%	1,870	374	\$12.35	\$17.63
Forest and Conservation Workers	Below Middle Skill	306	319	13	4%	255	51	\$10.05	\$12.38
Fallers	Below Middle Skill	40	41	1	3%	27	5	\$11.89	\$17.87
<b>Total</b>		<b>4,518</b>	<b>4,724</b>	<b>206</b>	<b>5%</b>	<b>2,966</b>	<b>593</b>	<b>\$12.68</b>	<b>\$18.20</b>

Source: EMSI 2017.4

**Bay Region** includes Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

**Table 2. Employment Outlook for Arboriculture and Tree Climber Specialist Occupations in East Bay Sub-Region**

Occupation	Skill Level	2016 Jobs	2021 Jobs	5-Yr Change	5-Yr % Change	5-year Openings	Annual Openings	10% Hrly Wage	Median Hrly Wage
Foresters	Above Middle Skill	45	47	2	4%	21	4	\$24.13	\$39.92
Pesticide Handlers, Sprayers, and Applicators, Vegetation	Middle Skill	269	285	16	6%	179	36	\$11.02	\$21.88
Tree Trimmers and Pruners	Below Middle Skill	1,232	1,295	63	5%	806	161	\$10.64	\$16.63
Forest and Conservation Workers	Below Middle Skill	33	35	2	6%	28	6	\$10.00	\$13.98
Fallers	Below Middle Skill	7	7	0	0%	5	1	Insf. Data	Insf. Data
<b>Total</b>		<b>1,586</b>	<b>1,668</b>	<b>82</b>	<b>5%</b>	<b>1,038</b>	<b>208</b>	<b>\$11.07</b>	<b>\$18.13</b>

Source: EMSI 2017.4

**East Bay Sub-Region** includes Alameda and Contra Costa Counties

### Job Postings in Bay Region and East Bay Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Jan 2017 – Dec 2017)**

Occupation	Bay Region	East Bay
Foresters (19-1032)	146	22
Tree Trimmers and Pruners (37-3013)	43	13
Fallers (45-4021)	40	14
Pesticide Handlers, Sprayers, and Applicators, Vegetation (37-3012)	25	13
Forest and Conservation Workers (45-401)	5	2
<b>Total</b>	<b>259</b>	<b>62</b>

Source: Burning Glass

**Table 4. Top Job Titles for Arboriculture and Tree Climber Specialist Occupations for latest 12 months (Jan 2017 – Dec 2017)**

Common Title	Bay Region	East Bay
Consulting Utility Forester	159	15
Tree Climber	41	13
Utility Forester - Field Specialist	7	0
Arborist Technician	7	0
Spray Technician	4	4

Source: Burning Glass

### Industry Concentration

**Table 5. Industries hiring Arboriculture and Tree Climber Specialist Workers in Bay Region**

Industry – 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2016)	Jobs in Industry (2021)	% Change (2016-21)	% in Industry (2016)
Landscaping Services (561730)	3,123	3,235	69.1%	9.1%
Local Government, Excluding Education and Hospitals (903999)	339	357	7.5%	0.2%
Farm Labor Contractors and Crew Leaders (115115)	138	152	3.0%	0.6%
Crop Production (111000)	132	133	2.9%	0.3%
State Government, Excluding Education and Hospitals (902999)	110	115	2.4%	0.3%
Exterminating and Pest Control Services (561710)	86	89	1.9%	3.0%
Postharvest Crop Activities (except Cotton Ginning) (115114)	59	74	1.4%	0.6%

Source: EMSI 2017.4

**Table 6. Top Employers Posting Jobs in Bay Region and East Bay for latest 12 months (Jan 2017 – Dec 2017)**

Employer	Bay Region	Employer	East Bay
Davey Tree Expert Company	73	Davey Tree Expert Company	13
Western Environmental Consultants, Inc	55	Acrt Incorporated	8
Acrt Incorporated	12	The Brickman Group, Ltd	6
The Brickman Group, Ltd	8	Trugreen	5
Brightview	6	Scs Global Services	3
Trugreen	6	Brightview	2
Brightview Landscapes	5	City Of Berkeley	2

Source: Burning Glass

## Educational Supply

On the supply side, there are six community colleges in the Bay region issuing 60 awards annually for Horticulture (TOP 0109.00). Three of these community colleges are in the East Bay sub-region, issuing 14 awards annually on this same TOP code.

**Table 7. Horticulture Programs on TOP 0109.00 - Horticulture in Bay Region**

College	Sub-Region	CC Headcount	Transfer Students	Associate Degrees	Certificates or Other Credit Awards	Total Awards
Cabrillo	SC & Monterey	312	6	8	12	20
Diablo Valley	East Bay	181	3	0	8	8
Foothill	Silicon Valley	241	6	12	6	18
Las Positas	East Bay	85	4	0	0	0
Merritt	East Bay	511	0	0	6	6
Mission	Silicon Valley	16	0	0	0	0
Monterey	SC & Monterey	75	1	1	2	3
San Francisco	Mid-Peninsula	244	0	0	0	0
Santa Rosa	North Bay	94	1	0	0	0
Solano	North Bay	63	0	1	4	5
<b>Total Bay Region</b>		<b>1,813</b>	<b>21</b>	<b>22</b>	<b>38</b>	<b>60</b>
<b>Total East Bay Sub-Region</b>		<b>776</b>	<b>7</b>	<b>0</b>	<b>14</b>	<b>14</b>

Source: IPEDS, Data Mart and Launchboard

NOTE: For Community Colleges, the annual average for Associate Degrees and Certificates is 2014-17. There appears to be no programs at Other Educational Postsecondary Institutes based on a crosswalk of TOP to CIP codes.

## Gap Analysis

A labor market gap in the Bay region exists for this cluster of occupations with total annual openings of 593 and annual supply of 60 awards. This represents an annual undersupply of about 533 students. In the East Bay, there is also a gap with total annual openings of 208 and annual supply of 14 awards, for an annual gap of 194.

However, only one of the five occupations selected is a Middle Skill occupation as classified by the Centers of Excellence for Labor Market Research<sup>1</sup>. One requires a four-year, and the others are Below Middle Skill. Even if only the annual openings for the one middle skill occupation (Pesticide Handlers) is used for demand, then there is still a gap of 88 in the Bay Region and 22 in the East Bay sub-region.

## Student Outcomes

Student Outcomes data from Launchboard is available for students who took courses on Horticulture (TOP code 0109.00) in the Bay region. The following is a summary of the employment and earnings data presented in Table 8 below:

- Students, who took courses on TOP 0109.00 at Merritt College, had similar results for the four metrics compared to other colleges on this same TOP code in the region or sub-region.
- Students, who took courses on TOP 0109.00 in the Bay Region, were employed at lower rates and making less money compared to students across all program in the region.
- Students, who took courses on TOP 0109.00 at Merritt College, were employed at lower rates four quarters after exit (by 16%) but were making slightly more money, compared to students who took courses across all programs at Merritt.

<sup>1</sup> **Middle Skill** as defined by Centers of Excellence:

1. All occupations listed as having some college or associate degree = Yes
2. All occupations needing an apprenticeship = Yes
3. All occupations with a Bachelor's degree with  $\sim \geq 33\%$  of workers (CPS) having some college to associate degree = Yes
4. All occupations with high school or equivalent or no formal education with long-term OJT = Yes
5. All supervisory occupations (skills-builder qualified) = Yes
6. All occupations with high school or equivalent or no formal education with more than 5-yrs work experience = Yes
7. Exceptions for Bachelor's degree where there is pre-existing CCs level programs

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on Horticulture (TOP06 0109.00)**

2014-15	Bay Region (All Programs)	Merritt (All Programs)	State (0109.00)	Bay Region (0109.00)	East Bay (0109.00)	Merritt (0109.00)	Top College on TOP06 0109.00 Horticulture in Bay	
% Employed Four Quarters After Exit	68%	66%	53%	52%	51%	50%	Santa Rosa	71%
Median Earnings Two Quarters After Exit	\$12,640	\$8,275	\$7,175	\$8,485	\$8,525	\$8,755	San Francisco	\$13,310
Median % Change in Earnings	37%	45%	31%	30%	20%	18%	Cabrillo	81%
% of Students Earning a Living Wage	51%	51%	45%	46%	46%	47%	Foothill	57%

Source: Launchboard

## Skill & Certifications

**Table 9. Top Skills for Arboriculture and Tree Climber Specialist Occupations in the Bay Region (Jan 2017 – Dec 2017)**

Skill	Latest 12 Mos. Postings	Skill	Latest 12 Mos. Postings
Inspection	117	Microsoft Office	20
Environmental Science	91	Cardiopulmonary Resuscitation (CPR)	16
Data Entry	59	Customer Service	16
Asset Management	54	Scheduling	16
Information Technology Industry Experience	30	Budgeting	14

Source: Burning Glass

**Table 10. Certifications for Arboriculture and Tree Climber Specialist Occupations in the Bay Region (Jan 2017 – Dec 2017)**

Note: 82% of records have been excluded because they do not include a certification. As a result, the chart below may not be representative of the full sample.

Certification	Latest 12 Mos. Postings
Certified Arborist	20
Commercial Driver's License	12
Pest Control Applicator	7
Certified Forester	5

**Table 11. Education Requirements in Bay Region (Jan 2017 – Dec 2017)**

Education (minimum advertised)	Latest 12 Mos. Postings	% of Total Indicating Ed. Level
High school or vocational training	39	22%
Associate Degree	57	32%
Bachelor's Degree	80	45%

Source: Burning Glass

## Methodology

Occupations for this report were identified by use of skills listed in O\*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCCO Data Mart.

## Sources

O\*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard [www.calpassplus.org/Launchboard/](http://www.calpassplus.org/Launchboard/)

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor's Office MIS system

## Contacts

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