

March 2022

# Labor Market Analysis

## Utility Vegetation Management

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Prepared by the Central Valley/Mother Lode Center of Excellence

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# Table of Contents

- Summary..... 2
  - Key findings ..... 2
- Introduction..... 3
- Occupational Demand ..... 4
- Wages..... 4
- Job Postings ..... 4
  - Salaries..... 5
  - Education..... 5
  - Baseline and Specialized Skills..... 6
  - Software Skills..... 6
  - Certifications..... 7
- Education, Work Experience & Training..... 8
- Supply..... 9
- Student Outcomes ..... 10
- Conclusion..... 11
- Recommendation ..... 11
- Appendix A: Methodology & Data Sources ..... 12

**COVID-19 Statement:** This report includes employment projection data by Emsi. Emsi’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

*If for any reason this document is not accessible or if you have specific needs for readability, please contact us and we will do our utmost to accommodate you with a modified version. To make a request, contact Nora Seronello by phone at (209) 575-6894 or by email [seronellon@mjc.edu](mailto:seronellon@mjc.edu).*

# Summary

Please note the COVID-19 statement on page 2 when considering this report's findings.

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for utility vegetation management. Two occupations related to utility vegetation management were identified for Reedley College:

- 19-4071, Forest and Conservation Technicians
- 45-4011, Forest and Conservation Workers

## Key findings:

- **Occupational demand** — Nearly 970 workers were employed in jobs related to utility vegetation management in 2020 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is forest and conservation workers with 465 workers in 2020, a projected growth rate of 1% over the next five years, and 75 annual openings.
- **Wages** — Forest and conservation technicians earn the highest entry-level wage, \$15.46/hour in the subregion. Please note: forest and conservation workers entry wage is lower than the living wage for the subregion.
- **Employers** — Employers with the most job postings in the subregion are Forest Service, Farmworker Institute of Education & Leadership Development Field, and California Public Utilities Commission.
- **Occupational titles** — The most common occupational title in job postings in the subregion is forest and conservation technicians. The most common job title is conservation corps.
- **Skills and certifications** — The top baseline skill is english, the top specialized skill is natural resources, and the top software skill is Microsoft Excel. The most in-demand certification is a driver's license.
- **Education** — A high school diploma or equivalent is typically required for forest and conservation workers. An associate's degree is typically required for forest and conservation technicians.
- **Supply** — Analysis of postsecondary completions shows that on average 61 awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 95 trained workers in the subregion and 176 workers in the region. The Center of Excellence recommends that Reedley College work with the regional directors, the college's advisory board, and local industry in the expansion of programs to address the shortage of utility vegetation management workers in the region.

# Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Reedley College to provide labor market information for utility vegetation management. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. The average living wage for a single adult in the SCV/SML subregion is \$13.67/hour.<sup>1</sup> Analysis of the program and occupational data related to utility vegetation management resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 19-4071, Forest and Conservation Technicians
- 45-4011, Forest and Conservation Workers

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O\*NET OnLine are shown below.

## **Forest and Conservation Technicians**

**Job Description:** Provide technical assistance regarding the conservation of soil, water, forests, or related natural resources. May compile data pertaining to size, content, condition, and other characteristics of forest tracts under the direction of foresters, or train and lead forest workers in forest propagation and fire prevention and suppression. May assist conservation scientists in managing, improving, and protecting rangelands and wildlife habitats.

**Knowledge:** Public Safety and Security, English Language, Customer and Personal Service, Law and Government, Administration and Management

**Skills:** Active Listening, Critical Thinking, Reading Comprehension, Judgment and Decision Making, Speaking

## **Forest and Conservation Workers**

**Job Description:** 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, tree planters, and gatherers of nontimber forestry products such as pine straw.

**Knowledge:** Geography, English Language, Public Safety and Security, Administrative, Biology

**Skills:** Coordination, Speaking, Active Listening, Critical Thinking, Judgment and Decision Making

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<sup>1</sup> The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightcced.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

# Occupational Demand

The SCV/SML subregion employed 964 workers in utility vegetation management occupations in 2020 (Exhibit 1). The largest occupation is forest and conservation workers with 465 workers in 2020. This occupation is projected to grow by 1% over the next five years and has the greatest number of projected annual openings, 75.

**Exhibit 1. Utility vegetation management employment and occupational projections in the SCV/SML subregion**

Occupation	2020 Jobs	2025 Jobs	5-Year Change	5-Year % Change	Annual Openings
Forest and Conservation Workers	465	470	5	1%	75
Forest and Conservation Technicians	499	508	9	2%	64
<b>TOTAL</b>	<b>964</b>	<b>978</b>	<b>14</b>	<b>1%</b>	<b>140</b>

# Wages

Exhibit 2 shows the entry-level hourly wages of the utility vegetation management occupations. Forest and conservation technicians earn the highest entry-level wage, \$15.46/hour in the subregion. Entry-level wages are derived from the 25<sup>th</sup> percentile. Please note: forest and conservation workers entry wage is lower than the living wage for the subregion.

**Exhibit 2. Utility vegetation management entry-level wages in the SCV/SML subregion**



# Job Postings

There were 35 job postings for the two occupations in the SCV/SML subregion from September 2021 to February 2022.<sup>2</sup> The employers with the most job postings are listed in Exhibit 3.

<sup>2</sup> Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

**Exhibit 3. Top employers of utility vegetation management by number of job postings**

Employer	Job Postings	% Job Postings
Forest Service	14	44%
Farmworker Institute Of Education & Leadership Development Field	4	13%
California Public Utilities Commission	3	9%
Johnson & Johnson	2	6%
National Park Service	2	6%
Teleflora	2	6%
Chloeta	1	3%
Coarsegold Resource Conservation District	1	3%
Madera/Chowchilla Rcd	1	3%
Tasteful Selections Llc	1	3%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across two O\*NET OnLine occupations. The occupational title forest and conservation technicians is listed in 28 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include Conservation Corps in four job postings, Forestry Technician in three job postings, and Forestry Technician Recreation in three job postings.

**Exhibit 4. Top occupational titles in job postings for utility vegetation management**

Occupational Title	Job Postings	% of Job Postings
Forest and Conservation Technicians	28	80%
Forest and Conservation Workers	7	20%

**Salaries**

Exhibit 5 shows the “Market Salaries” for utility vegetation management occupations that are calculated by Burning Glass which uses a machine learning model built off of millions of job postings every year, and accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

**Exhibit 5. Salaries for utility vegetation management occupations**

Market Salary Percentile	Salary Amount
10th Percentile	\$26,863
25th Percentile	\$30,493
50th Percentile	\$33,936
75th Percentile	\$42,509
90th Percentile	\$48,176

**Education**

Of the 35 job postings, 15 listed an education level preferred for the positions being filled. Among those, 80% requested high school or vocational training, 40% requested a bachelor’s degree and 7% requested

an associate degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below may total more than 100%.

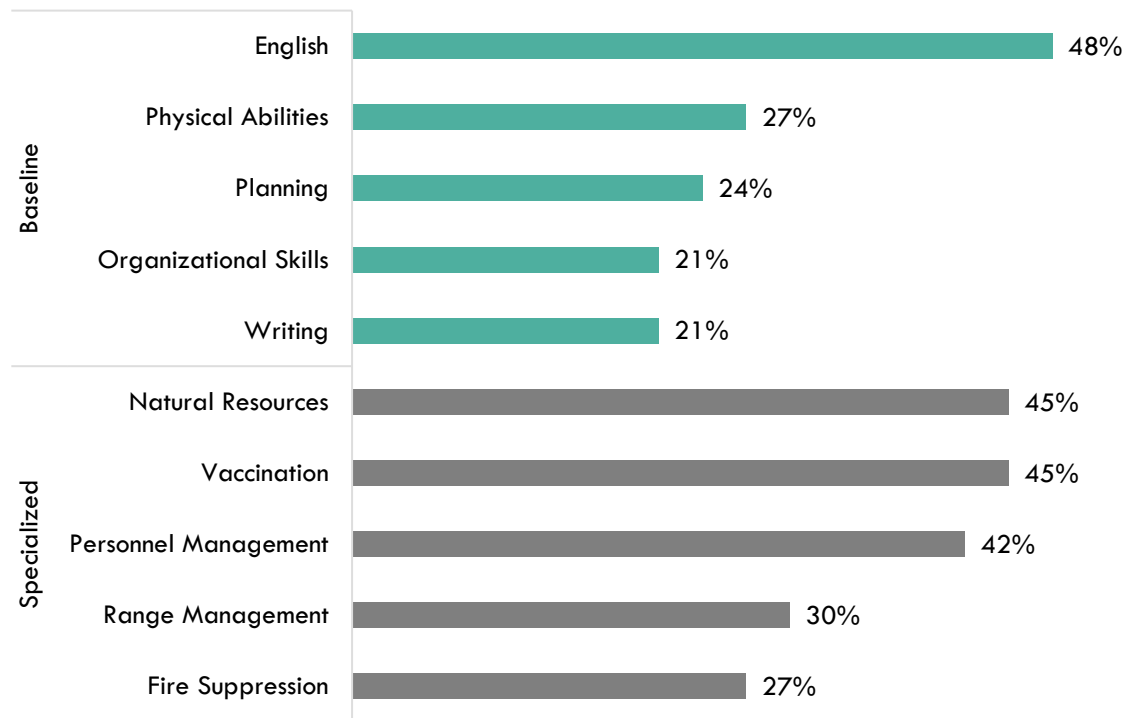
**Exhibit 6. Education levels requested in job postings for utility vegetation management**

Education Level	Job Postings	% of Job Postings
High school or vocational training	12	80%
Bachelor's degree	6	40%
Associate's degree	1	7%
Master's degree	1	7%

**Baseline and Specialized Skills**

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are English, 48% of job postings, physical abilities, 27%, and planning, 24%. The top three specialized skills are natural resources, 45% of job postings, vaccination, 45%, and personal management, 42%.

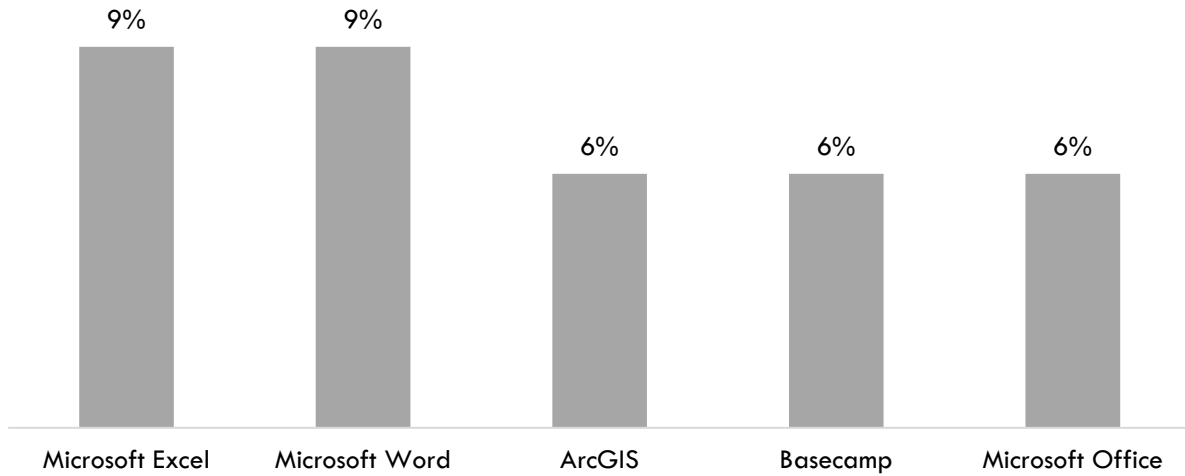
**Exhibit 7. In-demand utility vegetation management baseline and specialized skills**



**Software Skills**

Analysis also included the software skills most in demand by employers. Microsoft Excel and Word were the top two software skills identified in job postings (Exhibit 8).

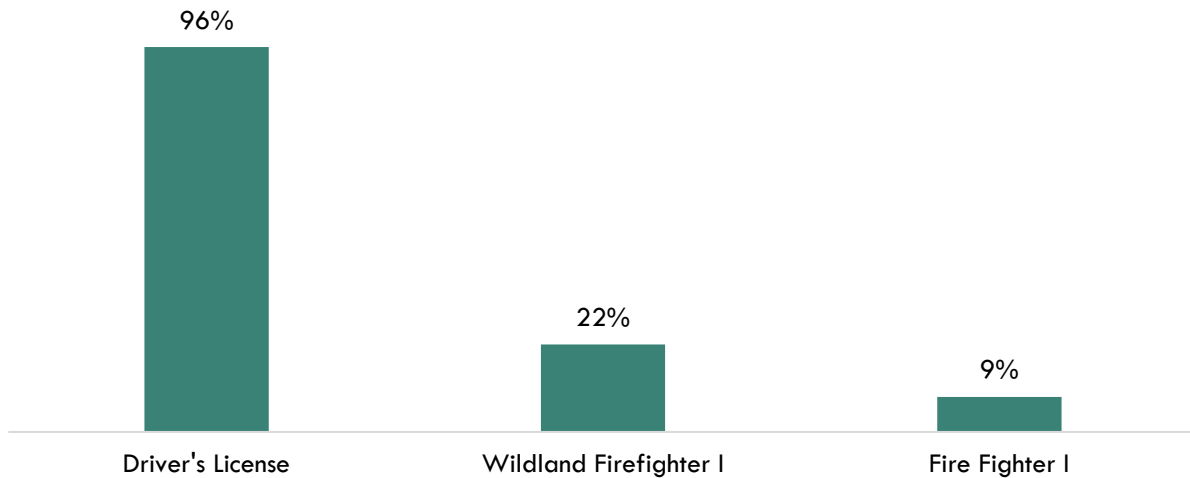
**Exhibit 8. In-demand utility vegetation management software skills**



**Certifications**

Of the 35 job postings, 23 contained certification data. Among those, 96% indicated a need for a driver's license. The next top certifications are a Wildland Firefighter 1 and Fire Fighter 1 (Exhibit 9).

**Exhibit 9. Top utility vegetation management certifications requested in job postings**





# Education, Work Experience & Training

A high school diploma or equivalent is typically required for forest and conservation workers. An associate's degree is typically required for forest and conservation technicians (Exhibit 10).

**Exhibit 10. Education, work experience, training, and Current Population Survey results for utility vegetation management occupations<sup>3</sup>**

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Forest and Conservation Workers	High school diploma or equivalent	None	Moderate-term	24.4%
Forest and Conservation Technicians	Associate's degree	None	None	37.1%

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<sup>3</sup> "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

# Supply

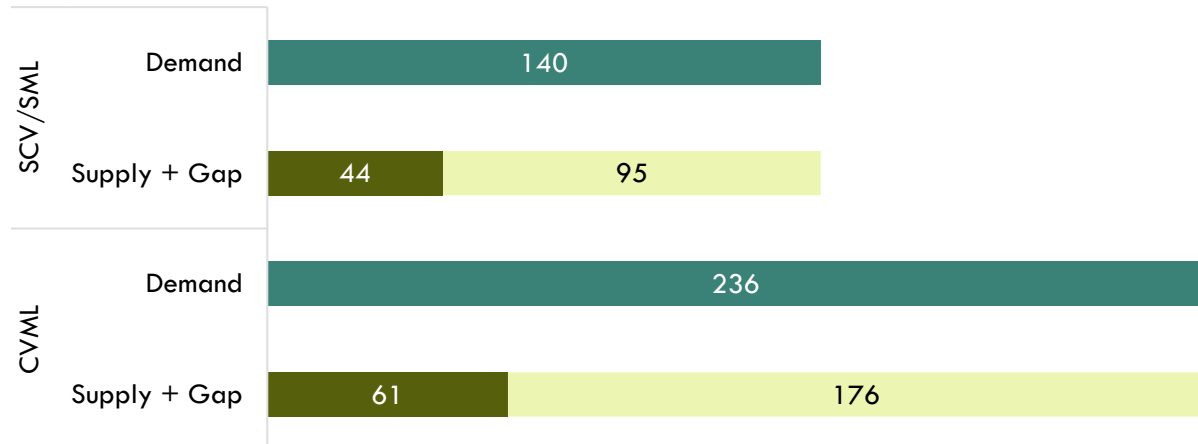
Analysis of program data from the California Community Colleges Chancellor’s Office Data Mart included the TOP and CIP codes and titles: 011400 – Forestry Analysis of the last three years of data shows that, on average, 61 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

**Exhibit 11. Postsecondary supply for utility vegetation management occupations in the region**

TOP/CIP Code- Title	College	Associate Degree	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Subtotal
011400 - Forestry	Bakersfield	19			2		21
	Columbia	11			4	2	16
	Reedley College	10	5	9			24
<b>TOTAL</b>		<b>40</b>	<b>5</b>	<b>9</b>	<b>6</b>	<b>2</b>	<b>61</b>

There is an undersupply of 95 utility vegetation management workers in the SCV/SML subregion and 176 workers in the region (Exhibit 12).

**Exhibit 12. Utility vegetation management workforce demand (annual job openings), postsecondary supply of students (awards), and additional students needed to fill gap in the SCV/SML subregion and region**



## Student Outcomes

Exhibit 13 summarizes employment and wage outcomes from the California Community College Chancellor’s Cal-PASS Plus LaunchBoard for the TOP code related to utility vegetation management. Of note, 34 students received a degree or certificate or attained apprenticeship journey status; 66 students transferred; 75% of students obtained a job closely related to their field of study; 63% had a median change in earnings; and 59% of students attained a living wage.

**Exhibit 13. Subregional metrics for the TOP code related to utility vegetation management**

Metric	Forestry 011400
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	34
Number of Students Who Transferred	66
Job Closely Related to Field of Study	75%
Median Change in Earnings	63%
Attained a Living Wage	59%
* denotes data not available.	

## Conclusion

The entry-level wages of one of the two occupations exceed the SCV/SML subregion's average living wage. There were 35 job postings in the past six months for occupations related to utility vegetation management in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is english, and the top specialized skill is natural resources.
- The top software skill is Microsoft Excel.
- The top certification is a driver's license.

There is an undersupply of trained workers, a shortage of 95 in the SCV/SML subregion and 176 in the region.

## Recommendation

Based on these findings, it is recommended that Reedley College work with the regional director, the college's advisory board, and local industry in the expansion of programs to address the shortage of utility vegetation management in the region.

# Appendix A: Methodology & Data Sources

## Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor's Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry: <a href="http://economicmodeling.com">economicmodeling.com</a> .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: <a href="https://www.bls.gov/emp/tables/educational-attainment.htm">https://www.bls.gov/emp/tables/educational-attainment.htm</a> .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: <a href="http://labormarketinfo.edd.ca.gov">labormarketinfo.edd.ca.gov</a> .
Job Posting and Skills Data	Burning Glass: <a href="http://burning-glass.com/">burning-glass.com/</a> .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: <a href="http://onetonline.org">onetonline.org</a> .

## Key Terms and Concepts

**Annual Job Openings:** Annual openings are calculated by dividing the number of years in the projection period by total job openings.

**Education Attainment Level:** The highest education attainment level of workers age 25 years or older.

**Employment Estimate:** The total number of workers currently employed.

**Employment Projections:** Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

**Living Wage:** The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

**Occupation:** An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

**Percent Change:** Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

**Replacements:** Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

**Total Job Openings (New + Replacements):** Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

**Typical Education Requirement:** represents the typical education level most workers need to enter an occupation.

**Typical On-The-Job Training:** indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.