

# Regenerative Agriculture Occupations

# Labor Market Information Report

# West Valley College

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

**March 2021**

## Recommendation

Based on all available data, there appears to be an “undersupply” of Regenerative Agriculture workers compared to the demand for this cluster of occupations in the Bay region and in the Silicon Valley sub-region (Santa Clara counties). There is a projected annual gap of about 2,834 students in the Bay region and 151 students in the Silicon Valley Sub-Region.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0115.00 - Natural Resources programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at West Valley College and in the region.

This report profiles Regenerative Agriculture Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a proposed new Regenerative Agriculture on Public and Private Lands certificate program at West Valley College.

Labor market information (LMI) is not available at the eight-digit SOC Code level for Agricultural Technicians (19-4011.01), therefore, the data shown in Tables 1 and 2 is for Agricultural and Food Science Technicians (at the six digit SOC level) and likely overstates demand for Agricultural Technicians. Tables 3, 4, 6, 9, 10 and 11 use job postings data from Burning Glass at the eight-digit SOC Code level for Agricultural Technicians (19-4011.01).

* **Farmers, Ranchers, and Other Agricultural Managers (11-9013):** Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial and marketing activities. Excludes “First-Line Supervisors of Farming, Fishing, and Forestry Workers” (45-1011).  
    Entry-Level Educational Requirement: High school diploma or equivalent  
    Training Requirement: None  
    Percentage of Community College Award Holders or Some Postsecondary Coursework: 32%
* **Agricultural and Food Science Technicians (19-4011):** Work with agricultural and food scientists in food, fiber, and animal research, production, and processing; and assist with animal breeding and nutrition. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects. Includes technicians who assist food scientists or technologists in the research and development of production technology, quality control, packaging, processing, and use of foods.  
    Entry-Level Educational Requirement: Associate’s degree  
    Training Requirement: Moderate-term on-the-job training  
    Percentage of Community College Award Holders or Some Postsecondary Coursework: NA%
* **First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011):** Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers. Excludes “First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers” (37-1012).  
    Entry-Level Educational Requirement: High school diploma or equivalent  
    Training Requirement: None  
    Percentage of Community College Award Holders or Some Postsecondary Coursework: 20%
* **Farmworkers, Farm, Ranch, and Aquacultural Animals (45-2093):** Attend to live farm, ranch, or aquacultural animals that may include cattle, sheep, swine, goats, horses and other equines, poultry, finfish, shellfish, and bees. Attend to animals produced for animal products, such as meat, fur, skins, feathers, eggs, milk, and honey. Duties may include feeding, watering, herding, grazing, castrating, branding, de-beaking, weighing, catching, and loading animals. May maintain records on animals; examine animals to detect diseases and injuries; assist in birth deliveries; and administer medications, vaccinations, or insecticides as appropriate. May clean and maintain animal housing areas. Includes workers who shear wool from sheep, and collect eggs in hatcheries.  
    Entry-Level Educational Requirement: No formal educational credential  
    Training Requirement: Short-term on-the-job training  
    Percentage of Community College Award Holders or Some Postsecondary Coursework: 14%

## Occupational Demand

**Table 1. Employment Outlook for Regenerative Agriculture Occupations in Bay Region**

| **Occupation** | **2019 Jobs** | **2024 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Farmers, Ranchers, and  Other Agricultural Managers | 10,705 | 10,690 | -15 | -0% | 5,565 | 1,113 | $ 20.05 | $ 40.51 |
| Agricultural and Food Science Technicians | 1,424 | 1,484 | 60 | 4% | 942 | 188 | $ 18.64 | $ 22.71 |
| First-Line Supervisors of Farming, Fishing, and Forestry Workers | 3,289 | 3,437 | 148 | 4% | 2,649 | 530 | $ 17.53 | $ 21.80 |
| Farmworkers, Farm, Ranch,  and Aquacultural Animals | 6,225 | 6,250 | 25 | 0% | 5,268 | 1,054 | $ 13.43 | $ 16.26 |
| **Total** | **21,643** | **21,861** | **218** | **1%** | **14,424** | **2,885** | **$17.67** | **$29.52** |
| Source: EMSI 2020.4 | | | | | | | | |

**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 Regenerative Agriculture Occupations in Silicon Valley Sub-region**

| **Occupation** | **2019 Jobs** | **2024 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Farmers, Ranchers, and Other Agricultural Managers | 564 | 472 | -92 | -16% | 266 | 53 | $17.12 | $35.22 |
| Agricultural and Food Science Technicians | 469 | 473 | 4 | 1% | 290 | 58 | $20.40 | $24.33 |
| First-Line Supervisors of Farming, Fishing, and Forestry Workers | 133 | 126 | -7 | -5% | 100 | 20 | $19.57 | $24.40 |
| Farmworkers, Farm, Ranch, and Aquacultural Animals | 324 | 263 | -61 | -19% | 253 | 51 | $17.10 | $19.37 |
| **Total** | **1,490** | **1,334** | **-156** | **-10%** | **909** | **182** | **$18.37** | **$27.38** |
| Source: EMSI 2020.4 | | | | | | | | |

**Silicon Valley Sub-Region includes:** Santa Clara Counties

### Job Postings in Bay Region and Silicon Valley Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Mar 2020 - Feb 2021)**

| **Occupation** | **Bay Region** | **Silicon Valley** |
| --- | --- | --- |
| Farm and Ranch Managers | 161 | 31 |
| Farmworkers, Farm, Ranch, and Aquacultural Animals | 121 | 17 |
| Agricultural Technicians | 84 | 11 |
| Food Science Technicians | 81 | 17 |
| Aquacultural Managers | 69 | 2 |
| Nursery and Greenhouse Managers | 53 | 16 |
| First-Line Supervisors of Agricultural Crop  and Horticultural Workers | 41 | 8 |
| First-Line Supervisors of Animal Husbandry  and Animal Care Workers | 30 | 0 |
| First-Line Supervisors of Logging Workers | 8 | 6 |
| First-Line Supervisors of Aquacultural Workers | 3 | 1 |
| Source: Burning Glass | | |

**Table 4a. Top Job Titles for Regenerative Agriculture Occupations for latest 12 months (Mar 2020 - Feb 2021) Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| Yard Attendant | 28 | Viticulturist | 9 |
| Cultivation Technician | 18 | Seasonal Ranch Technician | 8 |
| Seed Technician | 15 | Ranch Hand | 8 |
| Shelter Monitor | 14 | Cannabis Cultivator | 8 |
| Yard Attendant I | 10 | Harvest Coordinator | 7 |
| Growth Marketing | 10 | Cultivator | 7 |
| Farm Manager | 10 | Work In Sustainability Farm Ambassador | 6 |
| Digital Pest Management  Lot Platform Owner | 10 | Sorting Labor | 6 |
| Source: Burning Glass | | | |

**Table 4b. Top Job Titles for Regenerative Agriculture Occupations for latest 12 months (Mar 2020 - Feb 2021) Silicon Valley Sub-Region**

| **Title** | **Silicon Valley** | **Title** | **Silicon Valley** |
| --- | --- | --- | --- |
| Sorting Labor | 6 | Assistant Nursery Yard Manager | 3 |
| Seed Technician | 5 | Yard Attendant I | 2 |
| Horticulturist/Landscape Maintenance  Manager | 4 | Tenant Improvement | 2 |
| Sorting Labor | 6 | Hardscaper | 2 |
| Yard Attendant | 3 | Growth Marketing | 2 |
| Farm Manager | 3 | Greenhouse Manager | 2 |
| Digital Pest Management Lot Platform Owner | 3 | Food/Taste Tester | 2 |
|  |  | Farm Owner | 2 |
| Source: Burning Glass | | | |

## Industry Concentration

**Table 5. Industries hiring Regenerative Agriculture Workers in Bay Region**

| **Industry – 6 Digit NAICS (No. American**  **Industry Classification) Codes** | **Jobs in Industry (2019)** | **Jobs in Industry (2024)** | **% Change (2019-24)** | **% Occupation Group in Industry (2019)** |
| --- | --- | --- | --- | --- |
| Crop Production | 15,842 | 15,793 | 0% | 74% |
| Animal Production | 1,183 | 1,165 | -1% | 6% |
| Farm Labor Contractors and Crew Leaders | 920 | 1,051 | 14% | 4% |
| Postharvest Crop Activities (except Cotton Ginning) | 401 | 440 | 10% | 2% |
| Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) | 291 | 315 | 8% | 1% |
| Farm Management Services | 267 | 266 | 0% | 1% |
| Support Activities for Animal Production | 264 | 260 | -2% | 1% |
| Wineries | 265 | 278 | 5% | 1% |
| Soil Preparation, Planting, and Cultivating | 158 | 179 | 14% | 1% |
| Colleges, Universities, and Professional Schools (State Government) | 120 | 128 | 6% | 1% |
| Source: EMSI 2020.4 | | | | |

**Table 6. Top Employers Posting Regenerative Agriculture Occupations in Bay Region and Silicon Valley Sub-Region (Mar 2020 - Feb 2021)**

| **Employer** | **Bay** | **Employer** | **Silicon Valley** |
| --- | --- | --- | --- |
| Farm Fresh To You | 14 | Gallo Glass Company | 6 |
| University Of California | 8 | Lawrence Berkeley Lab | 6 |
| Meadows In Bloom | 8 | Leadpoint Business Services | 5 |
| Curion | 8 | Farm Fresh To You | 5 |
| Speedling Incorporated | 7 | Stanford University | 4 |
| Pepperidge Farm | 6 | Curtis Horticulture, Inc | 4 |
| Lawrence Berkeley Lab | 6 | Workers Com | 3 |
| Source: Burning Glass | | | |

## Educational Supply

There are three (3) community colleges in the Bay Region issuing 51 awards on average annually (last 3 years ending 2018-19) on TOP 0115.00 - Natural Resources. In the Silicon Valley Sub-Region, there are two (2) community colleges that issued 31 awards on average annually (last 3 years) on this TOP code.

**Table 7a. Community College Awards on TOP 0115.00 - Natural Resources in Bay Region**

| **College** | **Subregion** | **Associate** | **Certificate Low** | **Total** |
| --- | --- | --- | --- | --- |
| De Anza | Silicon Valley | 3 | 9 | 12 |
| Santa Rosa | North Bay | 5 | 15 | 20 |
| West Valley | Silicon Valley | 9 | 10 | 19 |
| **Total** |  | **17** | **34** | **51** |

*Note: The annual average for awards is 2016-17 to 2018-19.*

## Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 2,885 annual openings for the Regenerative Agriculture occupational cluster and 51 annual (3-year average) awards for an annual undersupply of 2,834 students. In the Silicon Valley Sub-Region, there is also a gap with 182 annual openings and 31 annual (3-year average) awards for an annual undersupply of 151 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0115.00 - Natural Resources**

| **Metric Outcomes** | **Bay**  **All CTE Program** | **West Valley**  **All CTE Program** | **State 0115.00** | **Bay 0115.00** | **Silicon Valley 0115.00** | **West Valley 0115.00** |
| --- | --- | --- | --- | --- | --- | --- |
| % Employed Four Quarters After Exit | 66% | 64% | 63% | 77% | 79% | 83% |
| Median Annual Earnings After Exit | $45,864 | $40,500 | $27,004 | $46,840 | $52,168 | $60,356 |
| Median % Change in Earnings | 31% | 35% | 30% | 37% | 42% | 35% |
| % of Students who Attained a Living Wage | 53% | 41% | 56% | 55% | 55% | 55% |
| Source: Launchboard, 2017-18 | | | | | | |

## Skills, Certifications and Education

**Table 9. Top Skills for Regenerative Agriculture Occupations in Bay Region (Mar 2020 - Feb 2021)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Quality Assurance and Control | 90 | Data Collection | 34 |
| Cleaning | 80 | Sales | 34 |
| Customer Service | 80 | Staff Management | 33 |
| Repair | 77 | Experiments | 32 |
| Scheduling | 65 | Project Management | 32 |
| Personal Protective Equipment (PPE) | 61 | Chemistry | 31 |
| Quality Management | 56 | Machinery | 29 |
| Lifting Ability | 50 | Packaging | 29 |
| Budgeting | 49 | Data Entry | 26 |
| Forklift Operation | 46 | Record Keeping | 25 |
| Spreadsheets | 45 | SAP | 25 |
| Biology | 41 | Fertilizers | 24 |
| Customer Contact | 39 | Agronomy | 23 |
| Source: Burning Glass | | | |

**Table 10. Certifications for Regenerative Agriculture Occupations in Bay Region (Mar 2020 - Feb 2021)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Driver's License | 182 | Food Handler Certification | 2 |
| First Aid Cpr Aed | 14 | Contractors License | 2 |
| Certified Pest Control | 4 | Cdl Class C | 2 |
| CDL Class A | 4 | American Institute of Certified Planners | 2 |
| Real Estate Certification | 3 | OSHA Forklift Certification | 1 |
| ServSafe | 2 | Licensed Financial Professional | 1 |
| Security Clearance | 2 | Global Food Safety Initiative (GFSI) | 1 |
| OSHA Safety 10 Hour | 2 | Contractors License | 2 |
| Food Service Certification | 2 | Certified Meeting Planner | 1 |
| Source: Burning Glass  *Note: 67% 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.* | | | |

**Table 11. Education Requirements for Regenerative Agriculture on Public and Private lands Occupations in Bay Region**

| **Education (minimum advertised)** | **Latest 12 Mos. Postings** | **Percent 12 Mos. Postings** |
| --- | --- | --- |
| High school or vocational training | 184 | 54% |
| Associate's degree | 11 | 3% |
| Bachelor's degree and higher | 149 | 43% |
| Source: Burning Glass | | |

*Note: 47% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.*

## 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 CCCCO Data Mart.

## Sources

O\*Net Online  
Labor Insight/Jobs (Burning Glass)  
Economic Modeling Specialists International (EMSI)  
CTE LaunchBoard 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

For more information, please contact:

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