Agriculture, Water, and Environmental Technologies
Regional Industry Advisory Meeting: Forestry Management

April 28, 2022 | 3:00 PM - 5:00 PM

Welcome & Introduction

Caitlin Blockus, Valley Vision, Project Manager

Thank you

to all of our supporters

Housekeeping

- Enable your video camera (optional)
- Please stay on unless you are called on to ask a question
- Submit all questions and commentary using the chat function
- This meeting will be recorded and will be provided as part of the post-meeting materials

Welcome & Introduction

Becky Roe, Shasta College, Director of Forest Health

Agenda

3:00 PM	Welcome & Introduction
3:10 PM	Labor Market Projections & Scope of Occupations
3:50 PM	Industry Panel Discussion
4:35 PM	Current, Emerging & Innovative Programs
4:55 AM	Conclusion & Next Steps

Labor Market Projections & Scope of Occupations

Melissa Kovacs

CSU Chico, Center of Economic Development

Senior Project Analyst

Forest Sector Workforce Needs Survey

Region Surveyed: California

Results collected between June and October 2021

Presented by Melissa Kovacs, Senior Project Analyst mkkovacs@csuchico.edu

Survey Results: Overview and Regional Responses

Survey Overview

Survey created in partnership with the

Statewide Wildfire and Forest Resiliency Task Force

Total Survey Responses

113

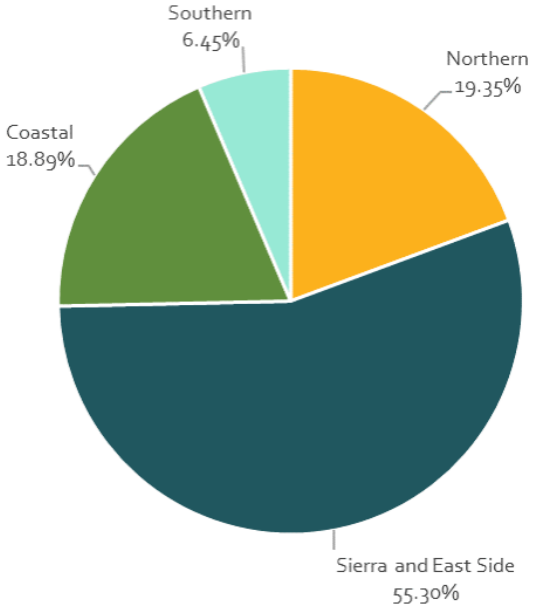
Response Rate

8.97%

Survey Responses Collected Between

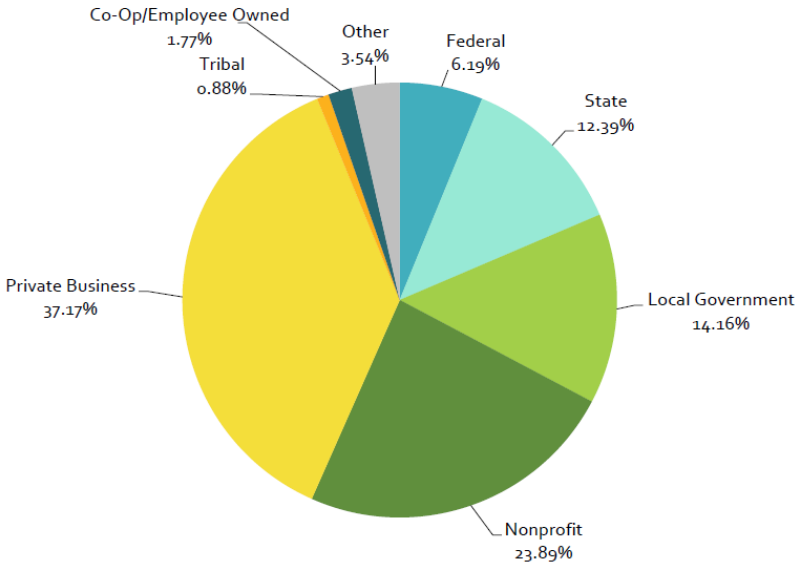
June 2021 – October 2021

Respondents by California's Forest Management Task Force regions



Survey Results: Business Characteristics

Ownership Type

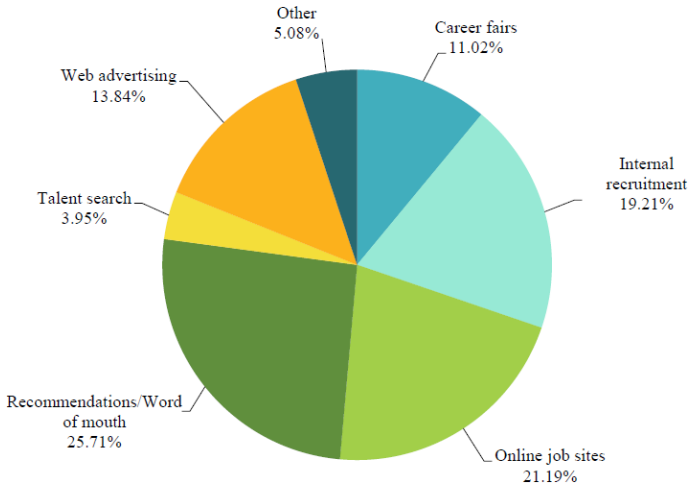


Entity Categorization

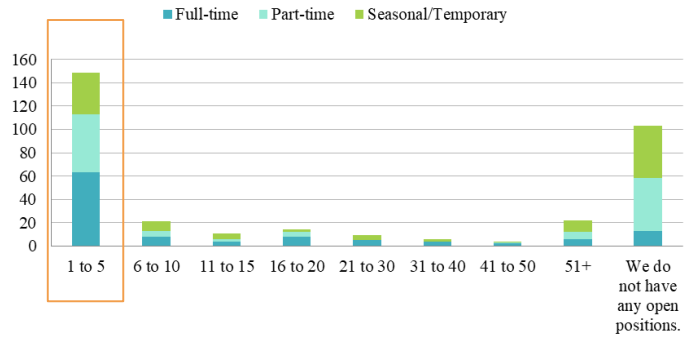
Entity Categorization	
Land Management	18.58%
Fuels Management	13.27%
Community Outreach and Education (NGOs)	7.96%
Implementation Agency	7.08%
Forestry Consultant (Licensed Foresters)	6.19%
Firefighting	4.42%
Logging	4.42%
Regulatory Agency	4.42%
Environmental Consulting (Biological Assessments, CEQA, NEPA)	2.65%
Tree Trimming/Care	2.65%
Value Added Products: Biomass (Animal Bedding, Firewood)	2.65%
Biomass Energy Facility	0.88%
Heavy Equipment Operators/Trucking	0.88%
Value Added Wood Products: Other	0.88%
Other	23.01%

Survey Results:
Employee Recruitment, Openings, and Timeline

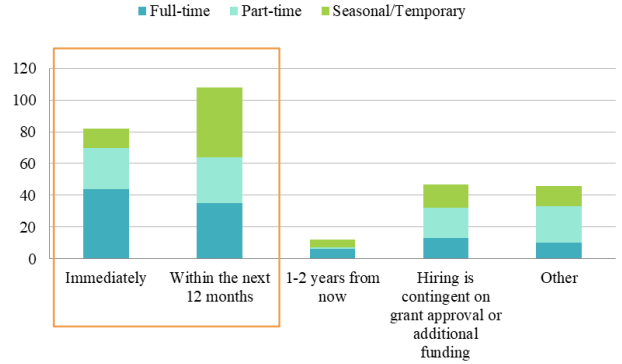
Methods of Recruitment



Number of Openings

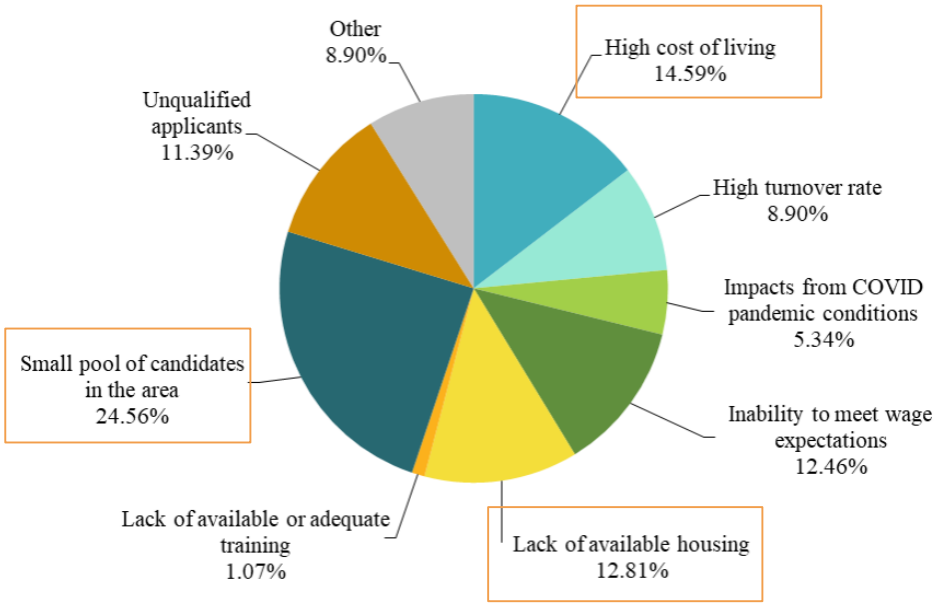


Hiring Timeline

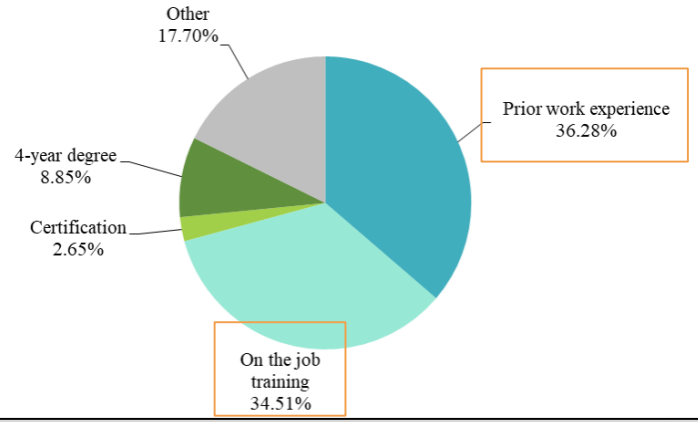


Survey Results: Reason for Hard to Fill Position and Skills

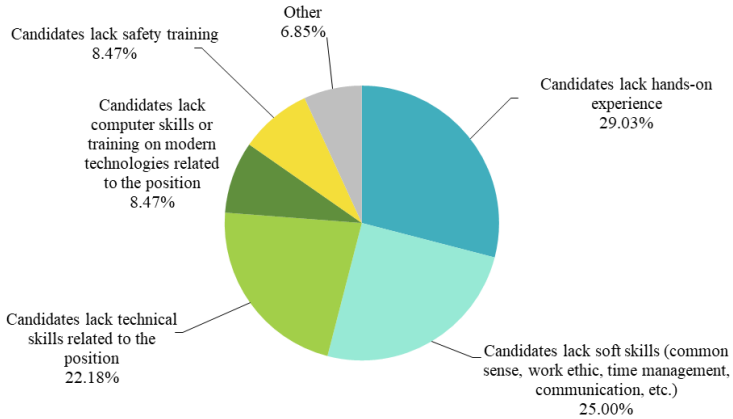
Reason for Hard to Fill Position



How Necessary Skills are Obtained



Gaps in Skills or Trainings



NORTHERN REGION

Top 3 Critical Positions	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change
Forest and Conservation Scientist	472	496	24	5.1%
Laborers	57	55	-2	-3.4%
Management	350	370	20	5.9%

(Source: Emsi Q3 2021 Data Set)

Forest and Conservation Scientist

$27.65
Average Median Hourly Wage

355
Job Postings 1/19-10/21

33
Competing Employers

472
Programs

24
Program Openings

Top Schools and # of Program Completions (2020)	
University of California, Davis	2,413
California State University, Sacramento	480
Humboldt State University	420
American River College	216
Solano Community College	188
Sonoma State University	153
Napa Valley College	106
Sacramento City College	97
Cosumnes River College	75
Santa Rosa Junior College	72

Laborers

$34.14
Average Median Hourly Wage

49
Job Postings 1/19-10/21

6
Competing Employers

57
Programs

-2
Program Openings

Top Schools and # of Program Completions (2020)	
National Career Education	154
Humboldt State University	89
Independent Training & Apprenticeship Program	71
InterCoast Colleges, Rancho Cordova	55
Santa Rosa Junior College	40
American River College	39
InterCoast Colleges, Fairfield	34
University of California, Davis	30
College of the Redwoods	15
Shasta College	12

Management

$37.79
Average Median Hourly Wage

21
Job Postings 1/19-10/21

9
Competing Employers

350
Programs

20
Program Openings

Top Schools and # of Program Completions (2020)	
Santa Rosa Junior College	3,046
University of California, Davis	1,596
California State University, Sacramento	1,442
American River College	1,126
Sacramento City College	697
Sonoma State University	697
Folsom Lake College	637
Shasta College	599
Humboldt State University	586
Solano Community College	554

SIERRA AND EAST SIDE

Top 3 Critical Positions	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change
Forest and Conservation Scientist	160	185	25	15.6%
Administration Workers	195	204	9	4.7%
Management	405	433	28	6.9%

(Source: Emsi Q3 2021 Data Set)

Forest and Conservation Scientist

$30.28
Average Median Hourly Wage

612
Job Posting 1/19-10/21

23
Competing Employers

19
Programs

479
Program Openings

Top Schools and # of Program Completions (2020)	
California State University, Chico	412
California State University, Fresno	403
Bakersfield College	354
Reedley College	252
Fresno City College	247
California State University, Bakersfield	221
Clovis Community College	217
Sierra College	204
Yuba College	70
College of the Sequoias	60

Administration Workers

$33.13
Average Median Hourly Wage

65
Job Posting 1/19-10/21

11
Competing Employers

15
Programs

5,377
Program Openings

Top Schools and # of Program Completions (2020)	
Sierra College	223
Butte College	145
Reedley College	141
Fresno City College	133
San Joaquin Valley College, Visalia	79
Santa Barbara Business College, Bakersfield	57
Shasta College	55
Bakersfield College	46
Milan Institute, Visalia	44
Yuba College	43

Management

$18.93
Average Median Hourly Wage

26
Job Posting 1/19-10/21

9
Competing Employers

42
Programs

2,277
Program Openings

Top Schools and # of Program Completions (2020)	
Bakersfield College	3,586
California State University, Fresno	1,685
Reedley College	1,495
California State University, Chico	1,068
Clovis Community College	1,066
College of the Sequoias	1,043
California State University, Bakersfield	758
Sierra College	630
Shasta College	599
Fresno City College	351

COASTAL REGION

Top 3 Critical Positions	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change
Transportation & Equipment Operators	95	107	12	12.7%
Fire Fighters and Wildfire Prevention	<10	<10	3	~ 30%
Management	246	288	42	16.9%

(Source: Emsi Q3 2021 Data Set)

Transportation and Equipment Operators

$22.99
Average Median Hourly Wage

331
Job Posting 1/19-10/21

8
Competing Employers

2
Programs

6,951
Program Openings

Top Schools and # of Program Completions (2020)	
Center for Employment Training, Soledad	45
California Polytechnic State University, San Luis Obispo	33
University of California, Berkeley	3

Fire Fighters and Wildfire Prevention

$50.48
Average Median Hourly Wage

2
Job Posting 1/19-10/21

0
Competing Employers

9
Programs

595
Program Openings

Top Schools and # of Program Completions (2020)	
San Francisco State University	253
California State University, Stanislaus	226
San Jose State University	206
California State University, East Bay	204
Las Positas College	137
City College of San Francisco	120
Los Medanos College	120
Modesto Junior College	71
Skyline College	70
Monterey Peninsula College	48

Management

$43.72
Average Median Hourly Wage

37
Job Posting 1/19-10/21

3
Competing Employers

49
Programs

6,957
Program Openings

Top Schools and # of Program Completions (2020)	
San Jose State University	1,841
San Francisco State University	1,785
University of California, Berkeley	1,759
Hartnell College	1,559
California Polytechnic State, San Luis Obispo	1,225
Cuesta College	1,200
Merced College	1,144
California State University, East Bay	1,068
Chabot College	1,007
Los Medanos College	1,003

SOUTHERN REGION

Top 3 Critical Positions	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change
Management	270	316	46	17.0%
Laborers	174	201	27	15.6%
Administration Workers	223	251	28	12.8%

(Source: Emsi Q3 2021 Data Set)

Management

$38.60
Average Median Hourly Wage

22
Job Posting 1/19-10/21

15
Competing Employers

46
Programs

11,945
Program Openings

Top Schools and # of Program Completions (2020)	
Santa Monica College	5,058
Irvine Valley College	3,783
Fullerton College	3,700
Saddleback College	3,593
Golden West College	3,390
Ashford University	3,268
Orange Coast College	2,919
Los Angeles Pierce College	2,856
Pasadena City College	2,810
California State University, Fullerton	2,782

Laborers

$24.24
Average Median Hourly Wage

14
Job Posting 1/19-10/21

5
Competing Employers

14
Programs

6,956
Program Openings

Top Schools and # of Program Completions (2020)	
Summit College	241
Los Angeles Trade Technical College	212
Southern California Institute of Technology	190
San Joaquin Valley College, Ontario	169
NTMA Training Centers of Southern California	139
Chaffey College	125
Santa Ana College	104
Santiago Canyon College	102
InterCoast College, West Covina	86
Palomar College	79

Administration Workers

$20.61
Average Median Hourly Wage

21
Job Posting 1/19-10/21

10
Competing Employers

22
Programs

33,295
Program Openings

Top Schools and # of Program Completions (2020)	
University of Southern California	936
East Los Angeles College	617
Irvine Valley College	373
California Technical Academy	357
College of the Canyons	351
California State University, Northridge	334
Santa Monica College	314
Coastline Community College	304
Chaffey College	250
Santa Ana College	238

Economic Impact of Projected Critical Position Job Change

NORTHERN REGION

Impact	Employment	Labor Income	Output
Direct	41	$3,001,112.38	$3,065,038.17
Indirect	6.09	$160,670.85	-$365,712.04
Totals	47.09	$3,161,783.23	$2,699,326.13

SIERRA AND EAST REGION

Impact	Employment	Labor Income	Output
Direct	69	$3,578,872.56	$7,011,244.74
Indirect	13.72	$614,035.01	$1,466,848.75
Totals	82.72	$4,192,907.57	$8,478,093.49

COASTAL REGION

Impact	Employment	Labor Income	Output
Direct	57	$4,593,795.47	$13,308,951.43
Indirect	22.36	$2,085,248.28	$4,702,995.61
Totals	79.36	$6,679,043.75	$18,011,947.04

SOUTHERN REGION

Impact	Employment	Labor Income	Output
Direct	100	$6,053,082.59	$22,434,310.73
Indirect	51.35	$3,569,288.06	$9,978,105.43
Totals	151.35	$9,622,370.65	$32,412,416.16

Source: IMPLAN

Thank you

Questions?

Melissa Kovacs, Senior Project Analyst mkkovacs@csuchico.edu

Labor Market Projections & Scope of Occupations

Ebony Benzing

California Community Colleges' North/Far North Center of Excellence

Research Manager

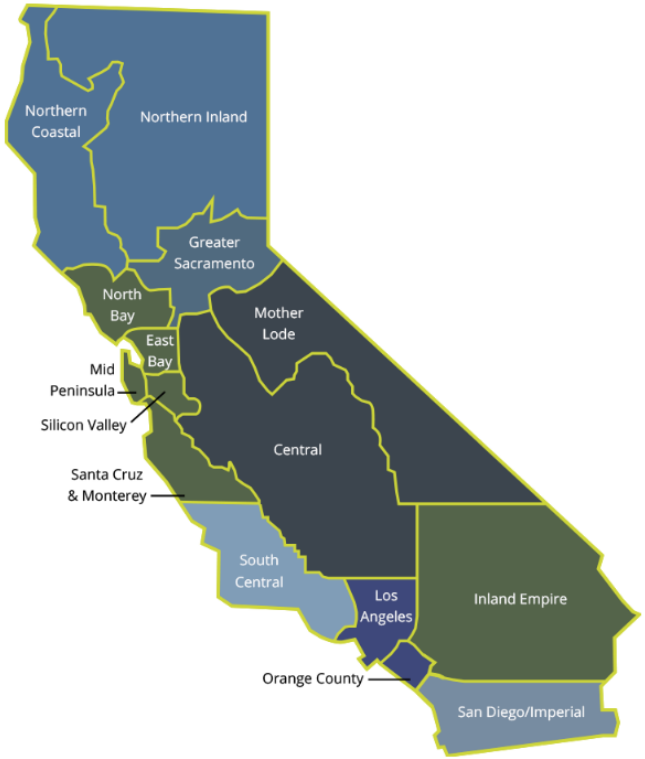
Forestry & Natural Resources North/Far North Regional Advisory

LOS RIOS COMMUNITY COLLEGE DISTRICT

C·O·E CENTERS OF EXCELLENCE FOR LABOR MARKET RESEARCH

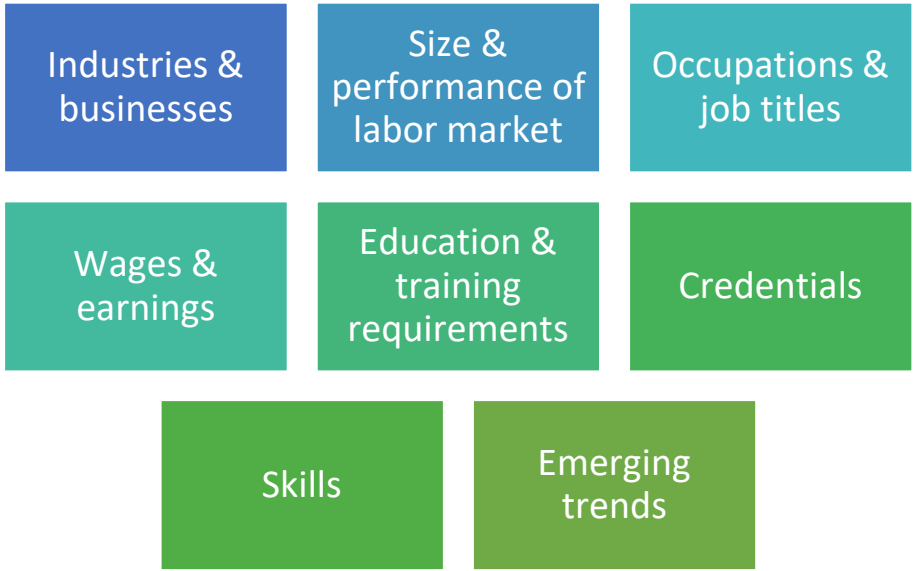
Thursday, April 28, 2022

Who is the Center of Excellence?



Region	Director
North/ Far North	Aaron Wilcher (North)
	Sara Phillips (Far North)
Bay Area	John Carrese
Central	Nora Seronello
South Central	Adele Hermann
Los Angeles	Luke Meyer
Orange County	Jesse Crete
Inland Empire/Desert	Michael Goss
San Diego/Imperial	Tina Ngo Bartel
Statewide	Laura Coleman

Typical COE Research Questions



- What is the employment **outlook** for students?
- What **skills** and **credentials** are needed?
- What **programs** look ripe for investment?

Traditional Labor Market Demand

- Source: EMSI Burning Glass
- 21 major occupations
- Projections 2020 - 2025
- 22-county North/Far North Region with breakouts for Greater Sacramento and Far North subregions
- Detailed data at end of presentation

Forestry & Natural Resources Roles

Technician

Provide technical work in sector and are supervised by management or professional staff

- Biological technicians
- Environmental engineering technologists and technicians
- Environmental science and protection technicians
- Forest and conservation technicians
- Forest and conservation workers
- Geological and hydrologic technicians

Professional

Provide key decision-making on design and implementation of projects and programs

- Conservation scientists
- Environmental scientists and specialists
- Foresters
- Geoscientists
- Hydrologists
- Soil and plant scientists

Management

Manage or administer programs and supervise staff

- First-line supervisors of farming, fishing, and forestry workers
- Natural science managers

Specialty

Provide specialty services in support of sector

- Fallers
- Log graders and scalers
- Logging equipment operators
- Logging workers, all other
- Surveyors
- Surveying and mapping technicians
- Tree trimmers and pruners

North (Greater Sacramento) Projected Demand 2020-2025

Subgroup	2020 Jobs	2025 Jobs	2020-2025 Change	2020-2025 % Change	2020-2025 Annual Job Openings
Professional	4,029	4,179	150	4%	424
Technician	2,730	2,897	167	6%	390
Specialty	2,031	2,194	163	8%	292
Management	996	1,090	94	9%	126
Sacramento Totals	**9,786**	**10,360**	**574**	**6%**	**1,232**

Occupations with the most jobs in 2020:

- Environmental scientists (2,975 jobs)
- Biological technicians (901 jobs)
- Tree trimmers and pruners (790 jobs)

Occupations with the fastest projected growth, 2020-2025:

- Logging equipment operators (16%)
- Soil and plant scientists (12%)
- Biological technicians (12%)

Source: EMSI 2022.1, QCEW Employees, Non-QCEW Employees, and the Self-Employed.

Far North Projected Demand 2020-2025

Subgroup	2020 Jobs	2025 Jobs	2020-2025 Change	2020-2025 % Change	2020-2025 Annual Job Openings
Technician	2,870	2,908	38	1%	394
Specialty	1,790	1,893	103	6%	296
Professional	1,017	1,065	48	5%	109
Management	794	870	76	10%	128
Far North Totals	6,471	6,736	265	4%	927

Occupations with the most jobs in 2020:

- Forest and conservation technicians (1,724 jobs)
- Logging equipment operators (874 jobs)
- Forest and conservation workers (739 jobs)

Occupations with the fastest projected growth, 2020-2025:

- Logging equipment operators (9%)
- First-line supervisors of farming, fishing, and forestry workers (9%)
- Conservation scientists (8%)
- Foresters (7%)

Source: EMSI 2022.1, QCEW Employees, Non-QCEW Employees, and the Self-Employed.

Educational Program Supply

- Source: CCCCO DataMart, IPEDS, and EMSI Burning Glass
- 22-county North/Far North Region with breakouts for Greater Sacramento and Far North subregions
- Detailed data at end of presentation

North/Far North Forestry & Natural Resources Supply

	3-Yr Average Annual Awards		
Geography	**Community College Awards (1)**	**Four-Year Bachelor's Degrees (2)**	**Total Supply (3)**
North (Greater Sacramento)	68	378	446
Far North	80	534	614
North/Far North Totals	**148**	**912**	**1,060**

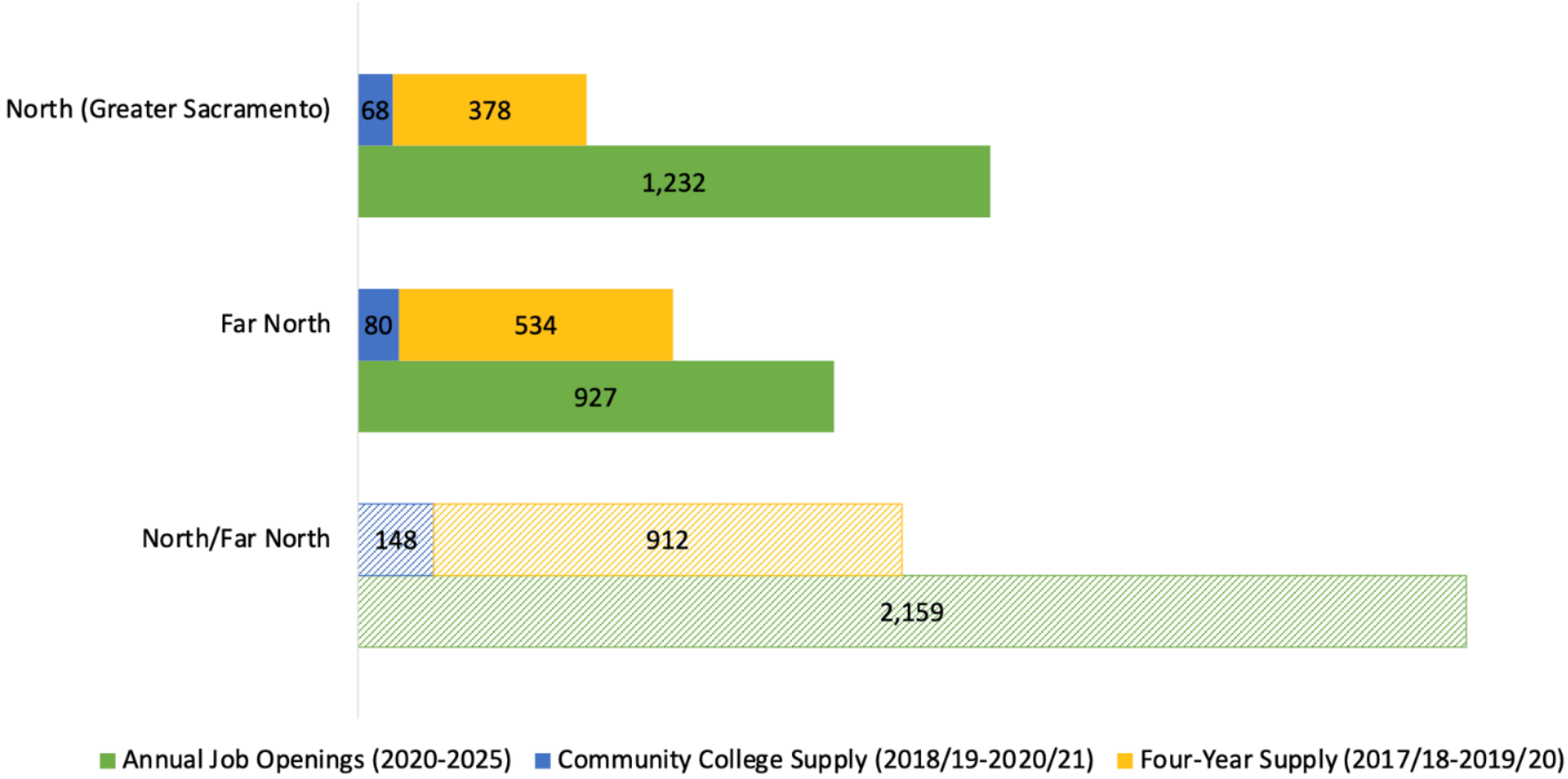
Average Annual Public Postsecondary Awards:
1,060 Awards
2017-18 through 2020-21

Colleges and Universities Offering Forestry & Natural Resources Programs		
	North (Greater Sacramento)	**Far North**
Community Colleges	• American River College • Cosumnes River College • Folsom Lake College • Lake Tahoe Community College • Sacramento City College • Sierra College • Woodland Community College • Yuba College	• Butte College • Mendocino College • College of the Redwoods • Shasta College • College of the Siskiyous
Four-Year Institutions	• California State University, Sacramento • University of California, Davis • William Jessup University	• Humboldt State University • California State University, Chico

North and Far North subregions offer different types of forestry and natural resources programs; specialty programs in both subregions

Sources: CCCCO DataMart, IPEDS, and EMSI. Notes: 1) Community college awards includes degrees and certificates. 2) Four-year bachelor's degree awards only counts forestry and natural resources programs; other STEM-related training is excluded. 3) Four-year supply data may over-estimate supply of program graduates to local labor market because these colleges and universities admit students from outside of the local area.

North/Far North Demand vs. Supply



Sources: EMSI 2022.1, CCCCO DataMart, and IPEDS. Notes: 1) Supply data may be under-estimated due to exclusion of certain training pathways. 2) Four-year supply data may over-estimate supply of program graduates to local labor market because these colleges and universities admit students from outside of the local area.

Thank You!

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C·O·E
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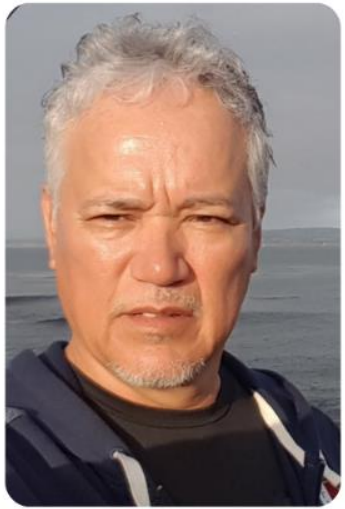
Recent North/Far North COE reports to check out:

1) Forestry Management and Protection in the Far North
2) Forestry Management and Reforestation in the Far North
3) Wildland Fire Training in the Greater Sacramento Region

Industry Panel Discussion

Ann Anderson
Beale Mountain Forestry
Owner & Forester

John McCarthy
CAL FIRE
Forester
Wood Products and
Bioenergy Program Administrator



Tony Ortiz
Mountain Enterprises
Field Safety Specialist

Jeremy Dorsey
U.S. Forest Service
District Ranger
Hume Lake Ranger District
Sequoia National Forest

Craig Ostergaard
Sierra Pacific Industries
South Sierra
Reforestation Manager

Current, Emerging, and Innovative Programs

Carlie Murphy
Lake Tahoe Community College
Forestry Education Grant Manager

Michael Bagley, Ph.D
Yuba College
Dean of STEM & Social Sciences

Steven Casperite
Placer School for Adults
Assistant Principal

FORESTRY

LAUNCHING THIS FALL

- EMPLOYABLE SKILLS CERTIFICATE
- CERTIFICATE OF ACHIEVEMENT
- ASSOCIATE OF SCIENCE

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FORESTRY EDUCATION & WORKFORCE DEVELOPMENT SUMMIT

MAY 12-13

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LAKE TAHOE COMMUNITY COLLEGE

North/Far North Program Offerings

Butte College

- A.S. Degree in Environmental Science
- A.S. Degree in Fire Technology
- A.S. Degree in Natural Resources Management
- Certificate in Forestry Technician
- Certificate of Achievement in Fire Technology
- Certificate of Achievement in Heavy Equipment Operator Technician
- Utility Line Arborist Clearance Training

Feather River College

- A.S. Degree in Environment Studies
- A.S. Degree in Environmental Science
- Certificates of Specialization
- Forest Health and Fuels Management

North/Far North Program Offerings

College of the Redwoods

- A.S. Degree in Forestry and Natural Resources (FNR)
- Forestry Technology Certificate of Achievement
- Federal Wildland Firefighter
- State Wildland Firefighter

Shasta College

- A.S. Degree Forest Science and Technology
- A.S. Degree Natural Resources
- Agriculture - Natural Resources Certificate
- Fire Technology - Wildland Firefighter I Academy
- Pest Control Advisor Prep Certificate
- Watershed Restoration Certificate
- Heavy Equipment Logging Operations & Maintenance Certificate

North/Far North Program Offerings

College of the Siskyous

- A.S in Environmental Science
- Fire Technology-Firefighter I

Lassen Community College

- A.S. Fire Technology
- Certificate of Achievement in Fire Technology
- Certificate of Accomplishment in Basic Firefighter

Mendocino College

- A.S. Degree in Natural Resources
- A.S. Fire Science
- FSC 68 Wildland Firefighting

A Job and Internship Platform for Students

Start your job or internship hunt at Handshake – a modern, easy-to-use platform where students and alumni can find full-time and part-time internships and jobs, as well as volunteer opportunities.

On Handshake, you can schedule advising appointments, connect with employers, register for events, and more! Log in to your Handshake using your Los Rios student ID and password.

GO TO HANDSHAKE

Thank you for joining!

For more information, please contact:

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