

# Maine Economy and Workforce

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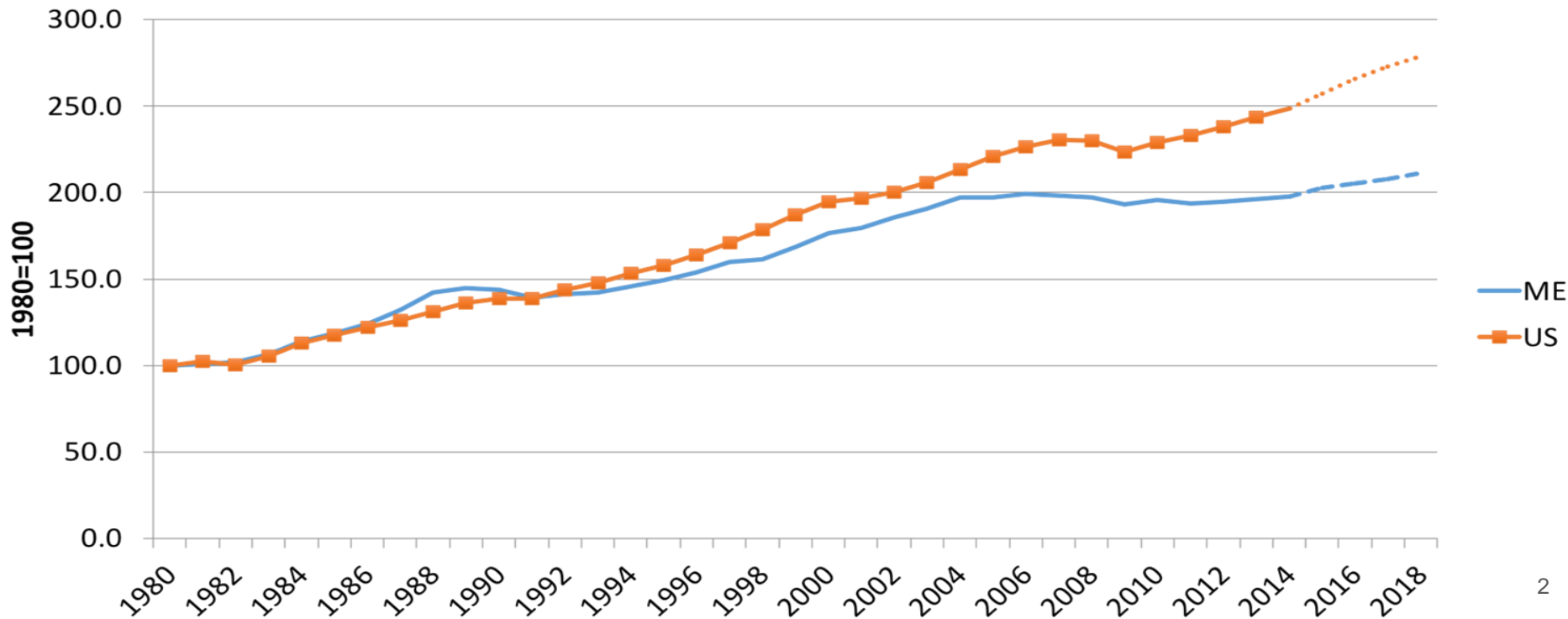
Research

University of Southern

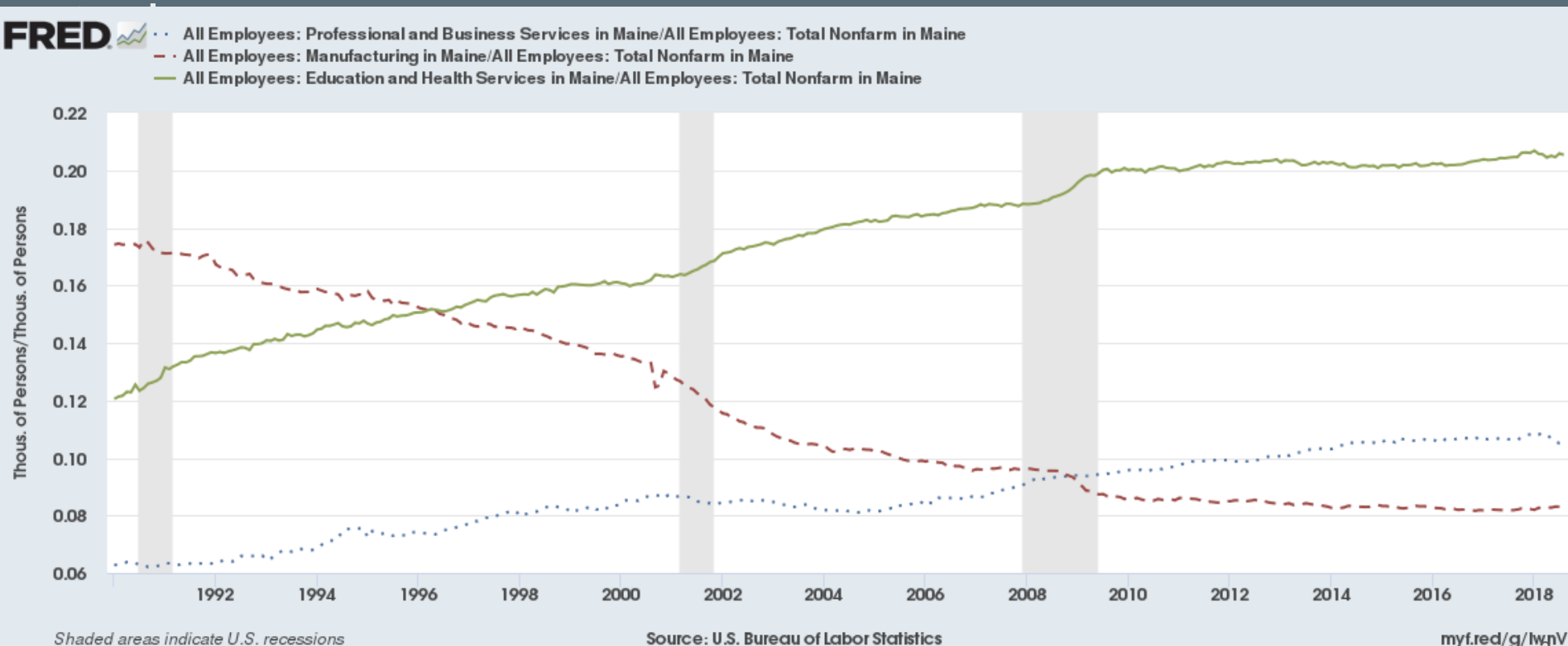
**Maine Mass Timber Conference - October 11, 2018**

# Maine economic growth has slipped on to its own track after years of consistently tracking US growth

## U.S. and Maine Real GDP Growth Index – History and Forecast



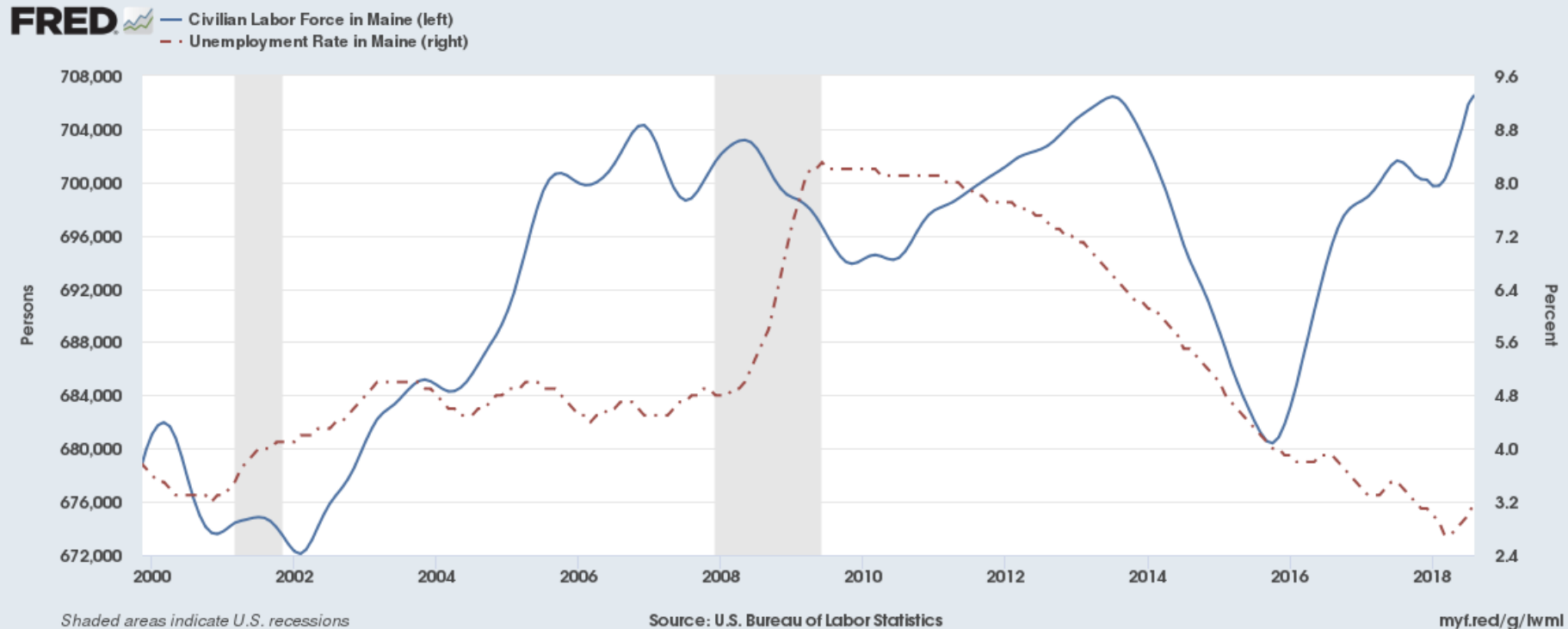
# Structural shifts in economy: declines in manufacturing have leveled off since 2010, while eds/meds and prof &



Big declines in pulp and paper employment; though wood products has rebounded since 2010.

Subsector/Industry	Employment, 2017	Emp. Change Since 2001		Emp. Change Since 2010	
		Number	Percent	Number	Percent
<b>Harvesting</b>	<b>3,990</b>	<b>-334</b>	<b>-8%</b>	<b>-132</b>	<b>-3%</b>
<b>Paper Manufacturing</b>	<b>4,635</b>	<b>-7,620</b>	<b>-62%</b>	<b>-2,762</b>	<b>-37%</b>
Pulp, Paper, and Paperboard Mills	3,314	-6,893	-68%	-2,572	-44%
Converted Paper Product Manufacturing	1,321	-727	-35%	-190	-13%
<b>Wood Furniture</b>	<b>882</b>	<b>-613</b>	<b>-41%</b>	<b>-201</b>	<b>-17%</b>
<b>Wood Product Manufacturing</b>	<b>4,875</b>	<b>-2,458</b>	<b>-34%</b>	<b>483</b>	<b>11%</b>
Veneer, Plywood & Engineered Wood Product	627	-534	-46%	132	27%
Other Wood Product Manufacturing	2,143	-1,520	-41%	115	6%
Sawmills and Wood Preservation	2,106	-404	-16%	236	13%
<b>Forest Products Industry Total</b>	<b>14,383</b>	<b>-11,024</b>	<b>-43%</b>	<b>-2,612</b>	<b>-15%</b>

# Workforce and labor market conditions biggest constraint to economic growth and competitiveness



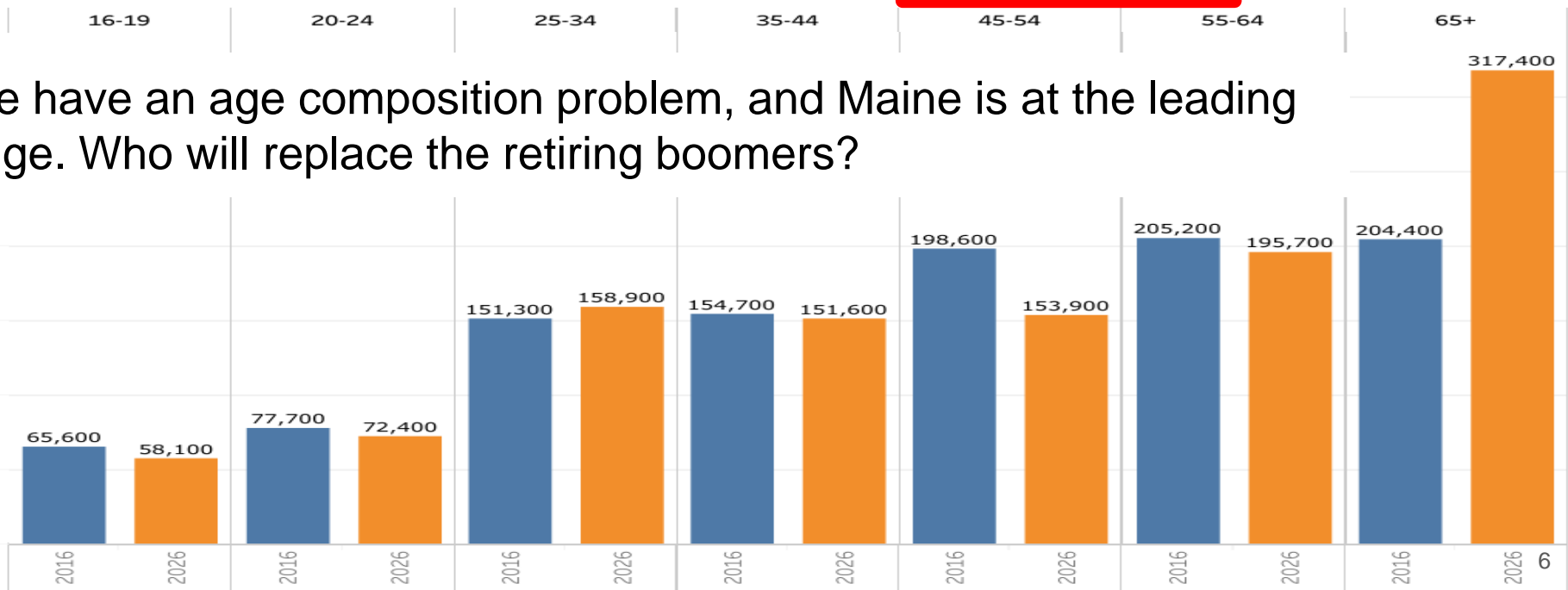
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

myf.red/g/lwml

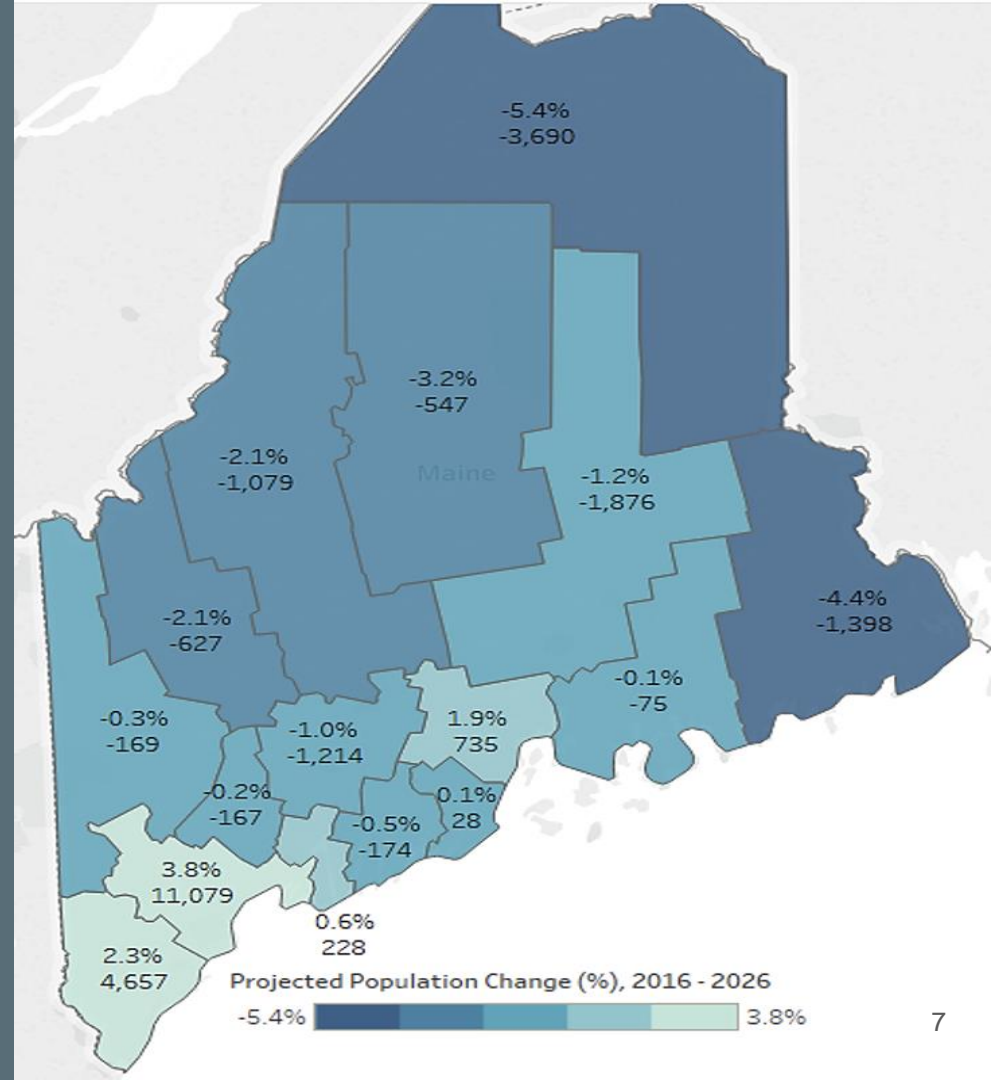
## Civilian Noninstitutionalized Population by Age in Maine, 2016 and Projected 2026

Age Group	2016	2026	Net Change	Percent change
16+	1,057,500	1,108,000	50,500	4.8%
16-19	65,600	58,100	-7,500	-11.4%
20-24	77,700	72,400	-5,300	-6.8%
25-34	151,300	158,900	7,600	5.0%
35-44	154,700	151,600	-3,100	-2.0%
45-54	198,600	153,900	-44,700	-22.5%
55-64	205,200	195,700	-9,500	-4.6%
65+	204,400	317,400	113,000	55.3%



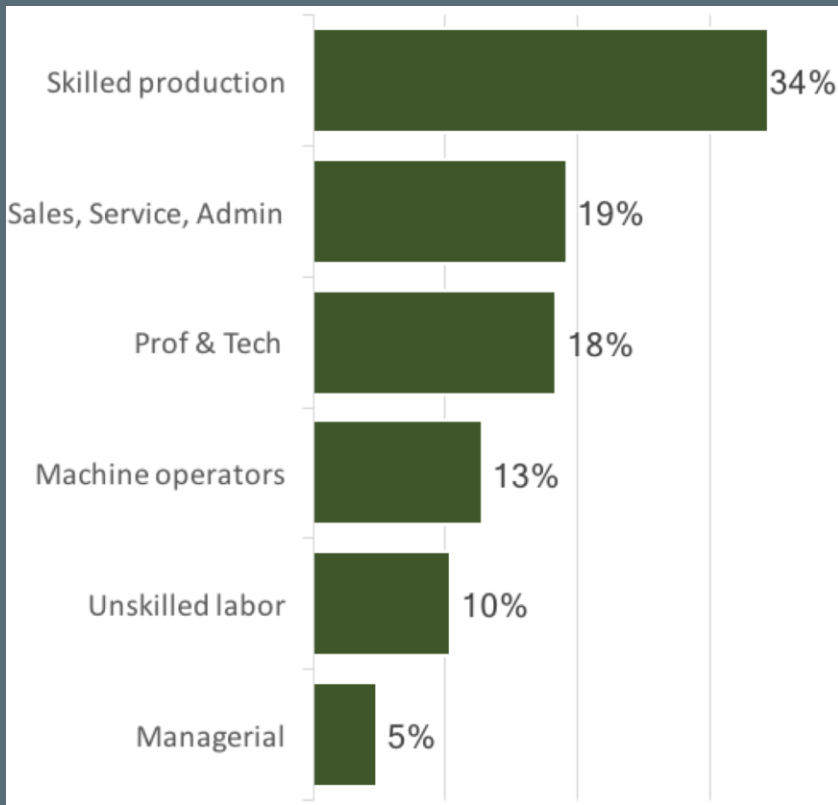
We have an age composition problem, and Maine is at the leading edge. Who will replace the retiring boomers?

Population and workforce challenges will differ regionally. Central and rim counties will be most strained by population out-migration and aging pop.



# Expected job category breakdown of a CLT facility/industry

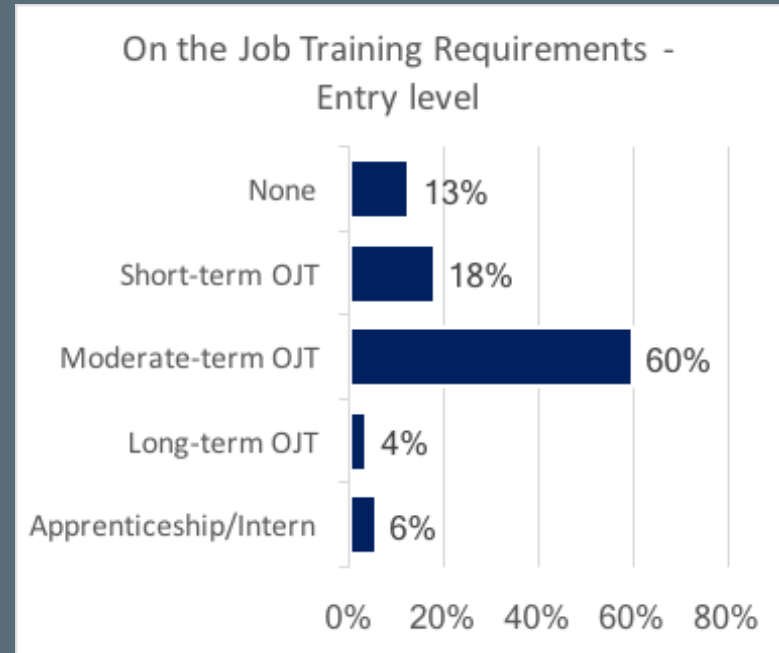
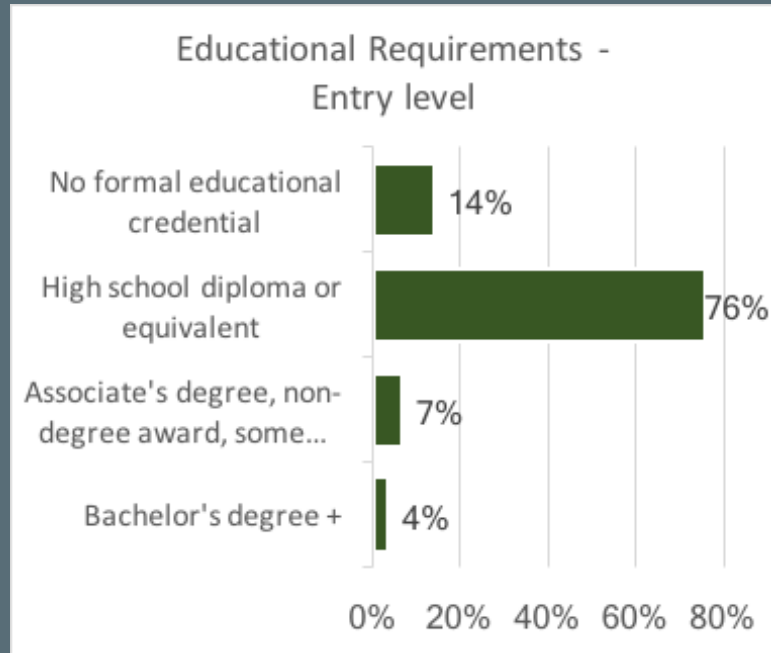
Example business critical occupations:



- Adhesive Bonding Machine Operators & Tenders
- Woodworking Machine Setters, Operators, & Tenders
- Sawing Machine Setters, Operators, & Tenders
- Wood Assemblers and Fabricators
- Industrial Machinery Mechanics
- Log Graders and Scalers
- Drafters & Architects
- Engineers & Engineer Technicians



# Example education and job training entry level credentials of CLT business critical occupations



As a nascent industry, there will be demands for specialized workers - some industry wide, some plant specific - limited in supply, but opportunities for adaptive skill sets from related industries.

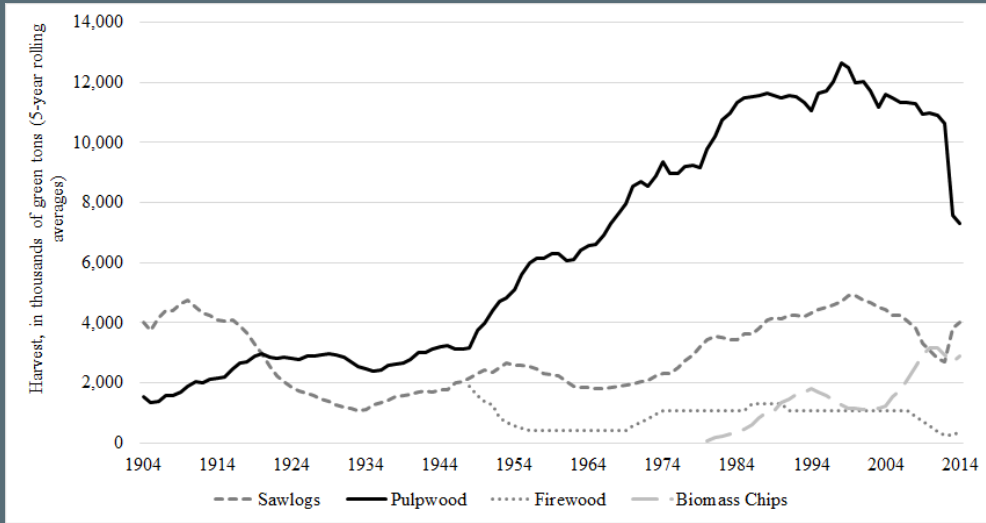
Specific knowledge and skills in areas such as:

- Building and design codes, standards, and certs
- CNC machining
- Structural lumber, connections, and engineering
- Adhesive bonding

Where will the labor supply come from?

# Background

## Maine Harvest by Product Class



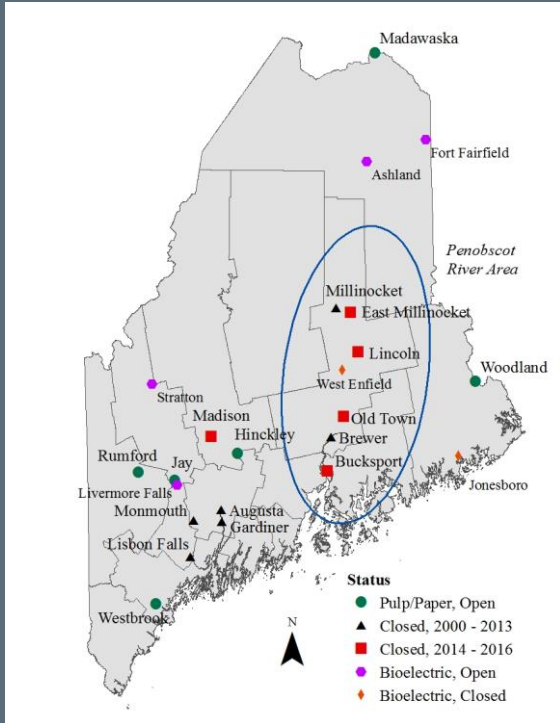
Industry in transition

Shifting employment opportunities

Crandall and Anderson (2016)

# Background

## Maine mills and closures



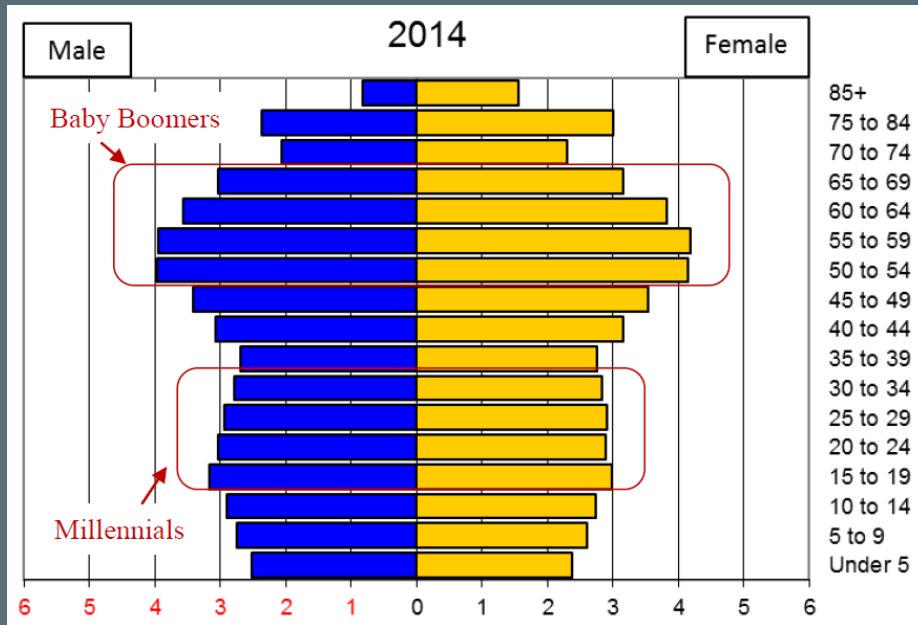
Industry in transition

Shifting employment opportunities

Potential labor mismatch

# Background

Maine Population Pyramid



Industry in transition

Shifting employment opportunities

Potential labor mismatch

Need to target young workers

# Background



Industry in transition

Shifting employment opportunities

Potential labor mismatch

Need to target young workers

Out-of-state forestry students

# Methods

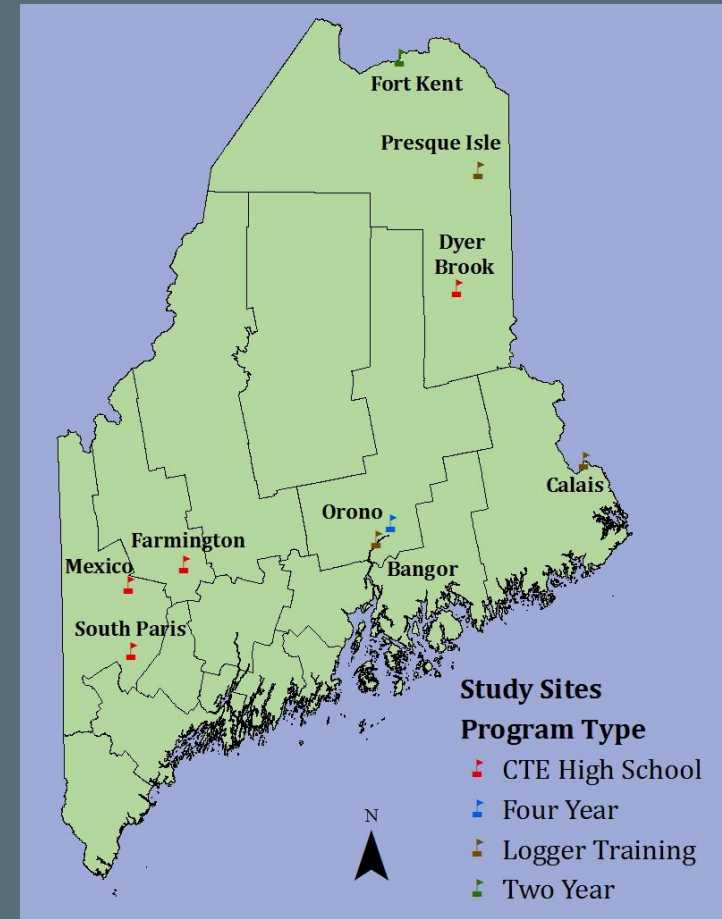
Study Area: Maine

Instrument: Questionnaires

Questionnaire Design



## Maine Forestry-Related Programs





# Methods

- Soft skills (9)

*Motivating personnel*

*Public relations*

*Presenting and public communication*

*Recreation use management*

*Customer relations*

*Dealing with change*



# Methods

- Soft skills (9)

*Regulations: local and state*

- Areas of knowledge (10)

*Safety*

*Wood properties and quality*

*Certification standards*

*Developing business plans*

*Inventory, quality, and process control*

# Methods

- Soft skills (9)

*Lumber grading*

- Areas of knowledge (10)

*Log scaling and tree quality*

- Technical skills (15)

*CAD/CAM/CNC*

*GIS/mapping*

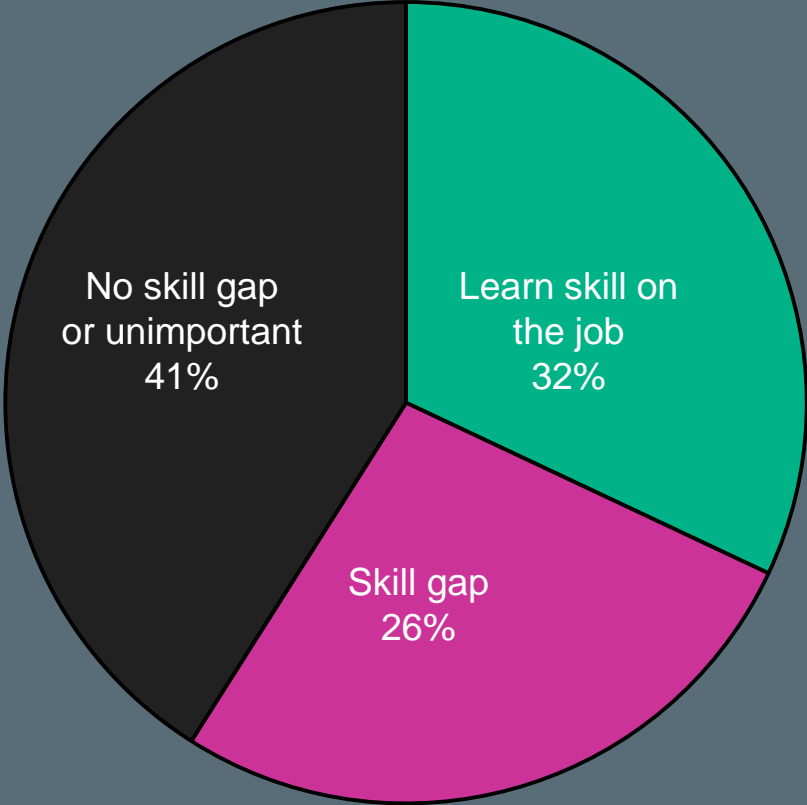
*Using growth and yield modes*

*Creating harvest plans/silviculture*

# Methods

- Soft skills (9) *Living remotely in the field regularly*
- Areas of knowledge (10) *Extended absences from home*
- Technical skills (15) *Working in areas without cell phone coverage*
- Work culture (5) *Living in areas without internet*  
*Non-traditional work hours (outside 7am-6pm)*

# Results: Employer and Student Gap Analysis



# Results: Skill Gaps

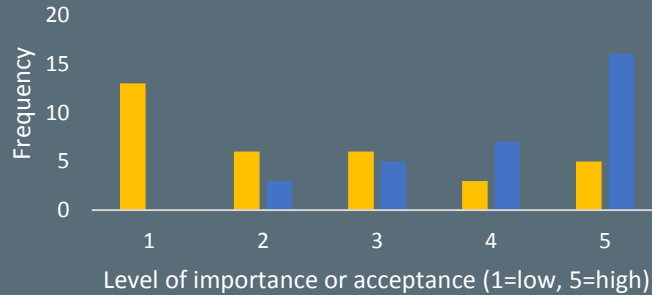
Soft Skills	Knowledge	Technical Skills
Negotiating contracts	Finding market info.	Growth and yield models
Customer relations	Marketing	Financial analysis
	Developing business plans	
	Product pricing	
	Inventory and controls	

# Work Culture: Preliminary Survey Results

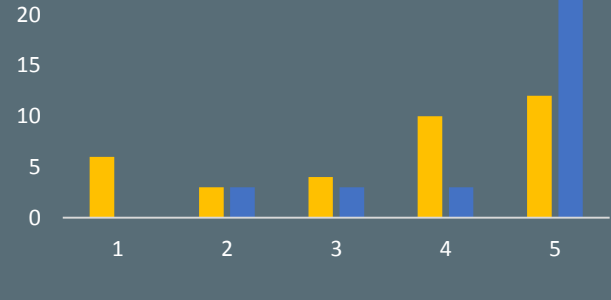
Employer level  
of importance

Student level  
of acceptance

## Living remotely in the field



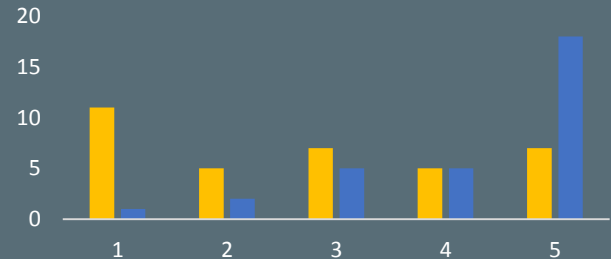
## Non-traditional work hours



## Extended absence from home

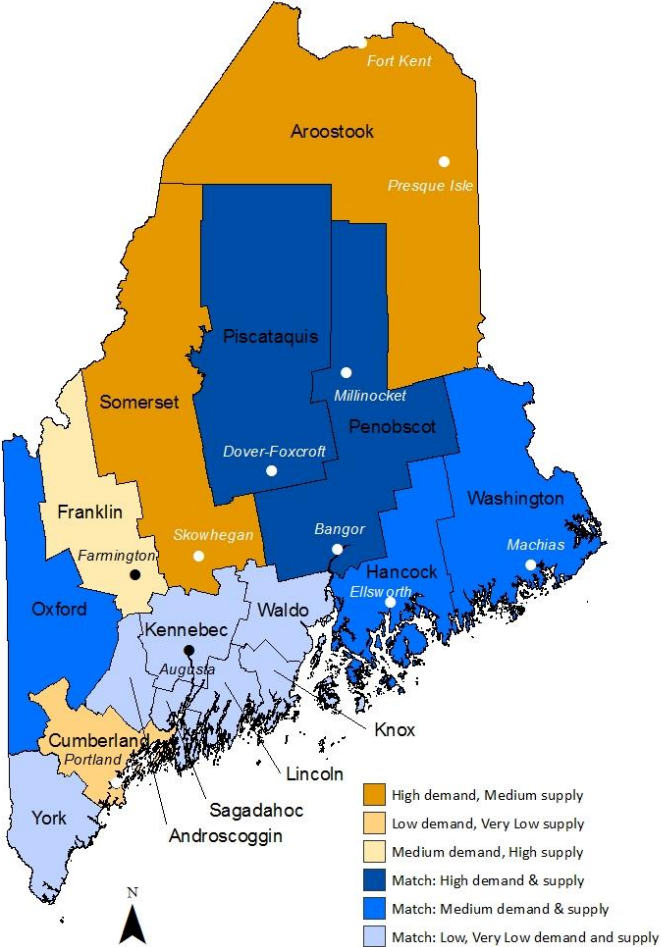


## Living in areas without internet





# Results: Spatial



# Conclusions

- More need for soft skills may indicate that natural-resource based fields are less specialized than they used to be.
- Preparing students with soft skills is translatable to a number of career paths, while reducing existing skill gaps will enable them to secure better jobs following graduation.
- Despite perceptions that younger generations are less willing to accept conditions required in many natural resource jobs, we did not find evidence of a work culture mismatch.
- Do we have enough students in our forestry programs?

# Strategies and ideas for building local workforce pipeline?

1. Training and Professional Development
2. Role of the Family
3. Recruitment

# Training and Professional Development

- Available training
- Career opportunities
- Professional development
- Better manager/supervisor relationships
- Apprenticeship and training programs
- Workers council or union
- High quality incumbent workers
- Positive work culture and labor relations

# Role of the Family

- Strong influence on career aspirations
- Foster family relationships
- *Bring your child to work day*
- Spousal employment



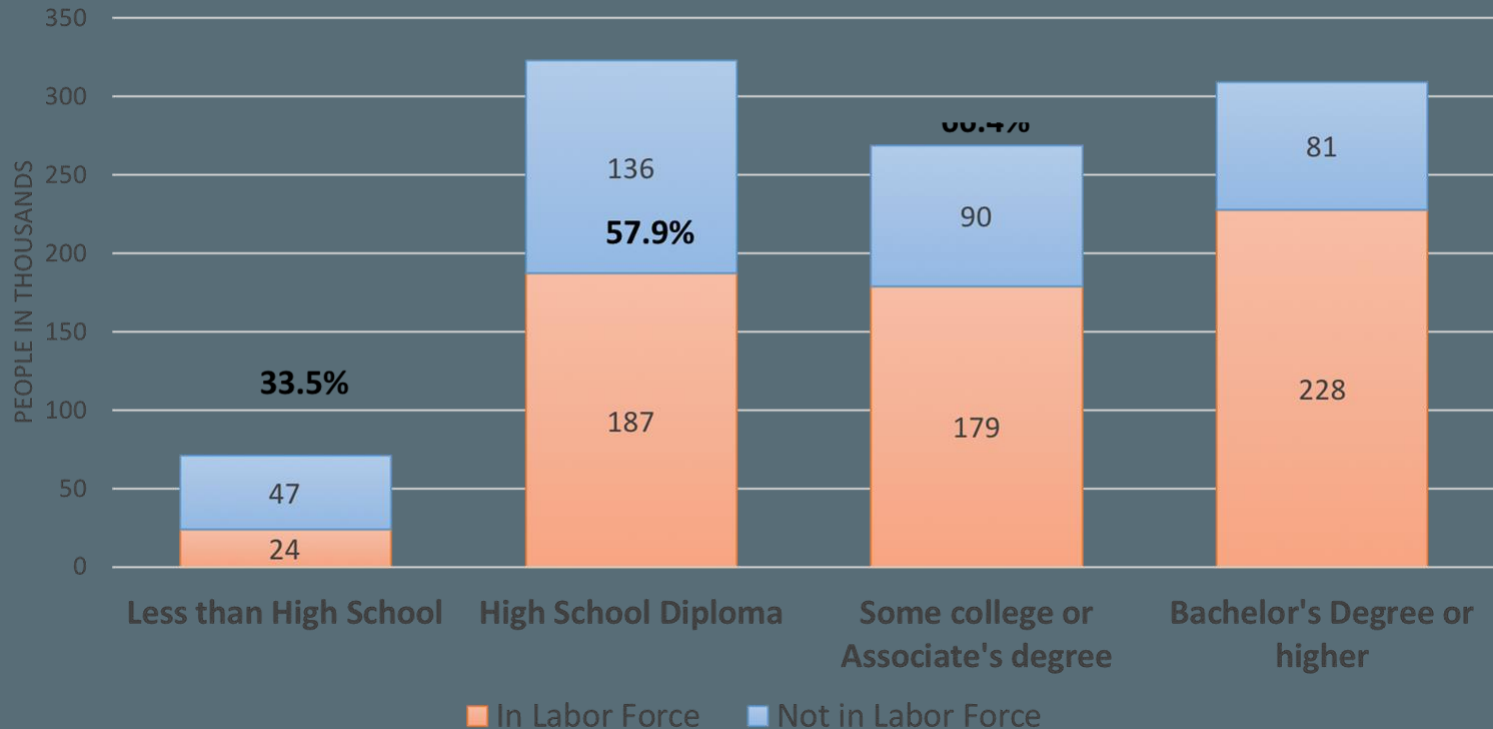
# Recruitment – local and global

- Identify target groups
- Utilize recruitment agencies
- Business websites and social media
  - *About* section
  - *Careers* section
  - Translation



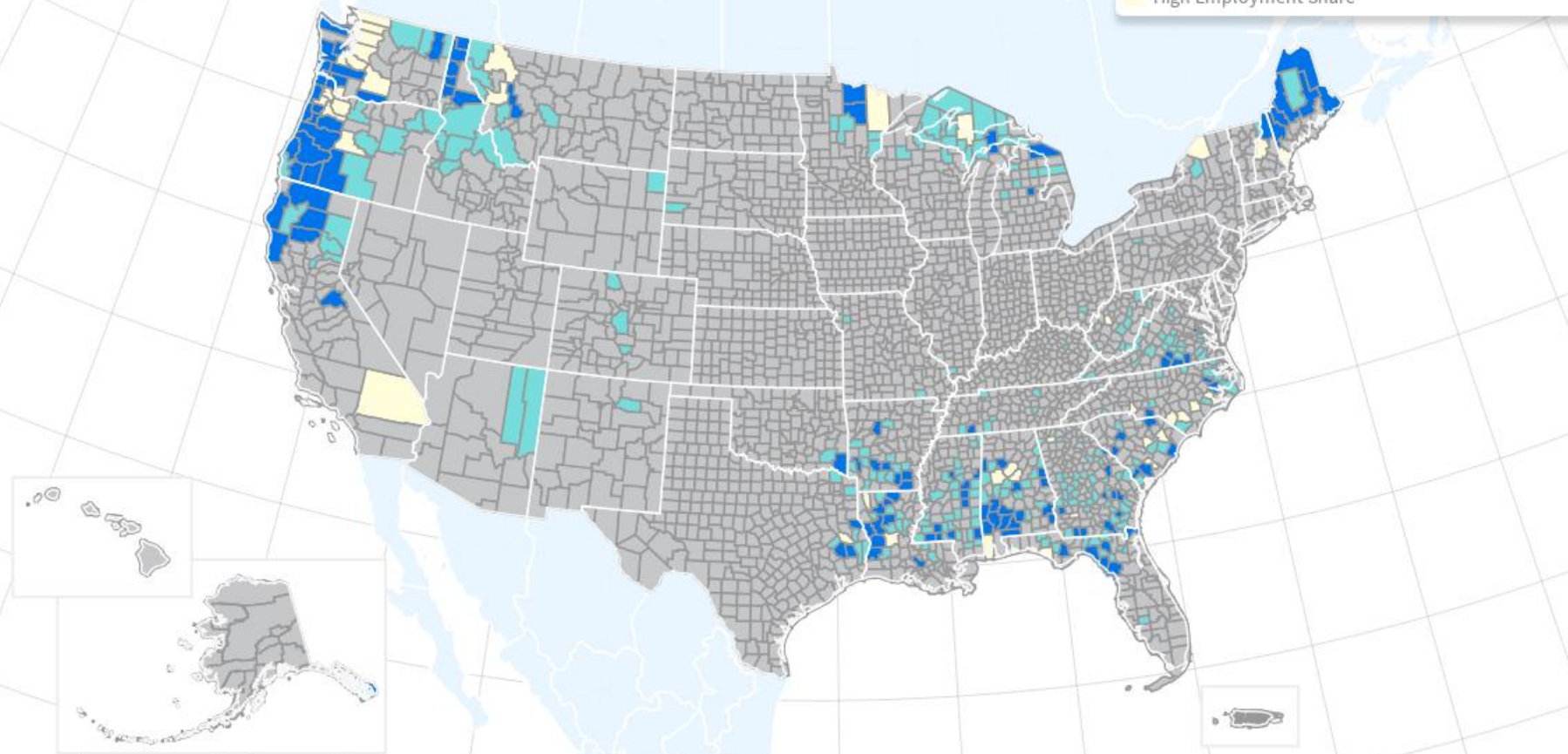
# Cultivating internal pipeline includes bringing displaced workers back into the job market

2016 Labor Force Participation by Educational Level – Rates in Bold



Specialization in Forestry Cluster  
by County, 2015

- High Employment Specialization and Share
- High Employment Specialization
- High Employment Share





# Strategies and ideas for attracting and retaining seasoned workers with adaptable skill sets and experience

Wage premiums

Selling on Quality of Place in Maine

Infrastructure support

Leverage workforce investment incentives or create new ones

The economic impact potential of CLT in Maine is sizeable, but should not be expected to replace pulp and paper.

Estimated economic impacts of a single CLT facility upon build-out. Five year average reported.

<u>Category</u>	<u>Units</u>	<u>Number</u>
<b>Total Employment</b>	Individuals (Jobs)	404
<b>Gross Domestic Product</b>	Millions of fixed 2018 \$	\$ 32.373
<b>Wages and Salaries</b>		\$ 15.230
<b>Output</b>		\$ 76.115
<b>Value Added</b>		\$ 33.723
<b>Jobs Multiplier</b>		3.2

Thank you.  
Questions?