

WORKFORCE NEEDS ASSESSMENT

March 31, 2023

SUBMITTED TO:

SEAMAINE

SUBMITTED



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INTRODUCTION

In support of the important work of SEAMaine and in concert with Camoin Associates, Thomas P. Miller Associates (TPMA) is pleased to present this Workforce Needs Assessment for the Maine Marine Living Resource (MLR) Economy. The Maine MLR economy is defined by SEAMaine as, “*seafood (capture and culture fisheries), processing and distribution, transportation/logistics, edible and non-edible products and product development, and related innovation, marketing and market development.*” This analysis builds off the work completed by the SEAMaine Workforce & Talent sub-committee and TPMA in a prior project to better account for the occupation families that make up the MLR economy, a sector that both encompasses and expands upon traditional North American Industry Classification System (NAICS) industry classification schema.

In the pages that follow, we apply this newly developed classification scheme in our analysis of the current workforce needs of the industry. Following a brief overview of the population, general labor force trends, and the state of housing in Maine, we estimate the skills gap between the workers the industry will need and the current pipelines of talent, the economic impact the industry has on the state of Maine, and a summary of the themes that emerged through one-on-one conversations with industry employers.

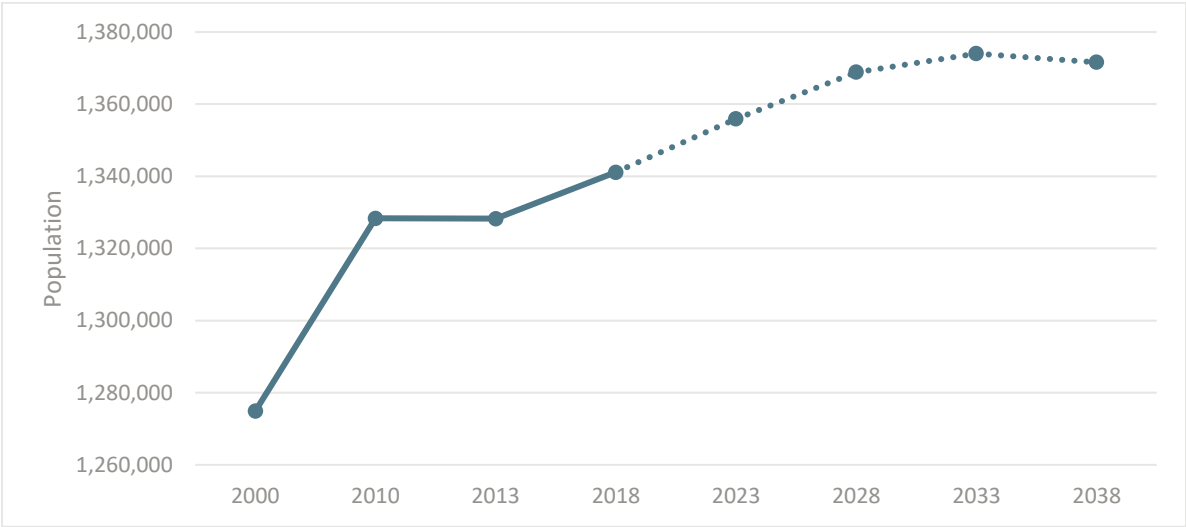
This report concludes with suggested strategies and opportunities to address current, and potentially future, gaps in the employment needs of the industry vis-à-vis the pool of available and interested potential workers.

STATE OF MAINE POPULATION AND LABOR FORCE TRENDS

In this section, we offer an overview of the overall trends in population and the labor force within the state of Maine, highlighting the growth of the population- coupled with a general decline in labor force participation.

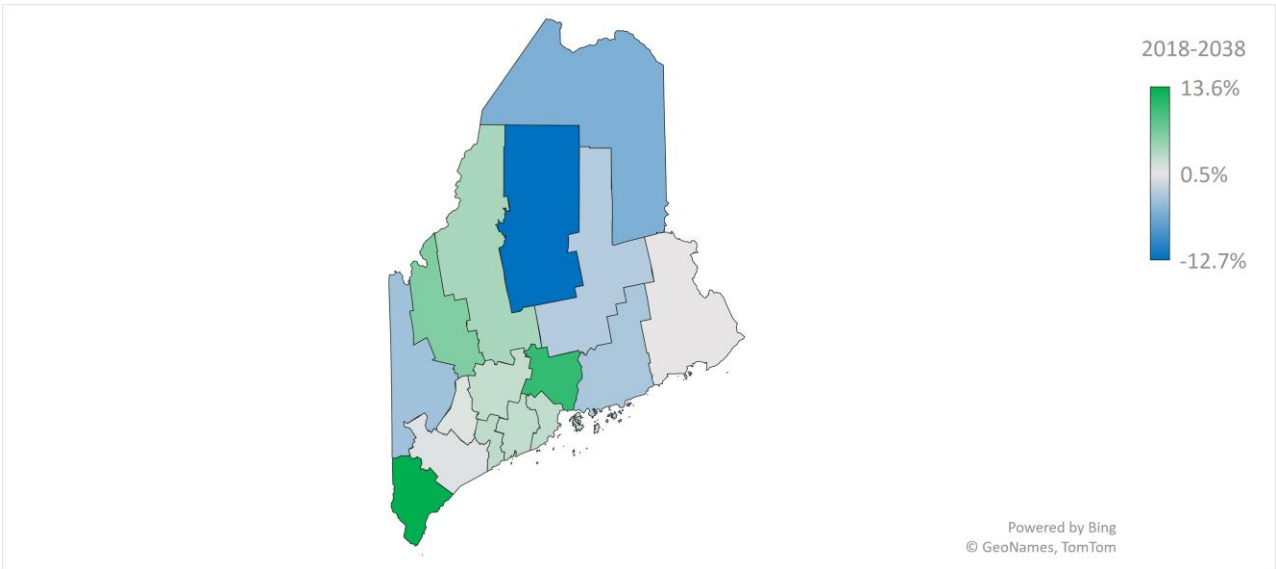
Between 2000 and 2018, Maine’s population has grown by 0.3% per year (or 5% for the entire period). The Maine State Economist’s Office has projected that the population is going to continue growing through 2033, followed by a decline from 2033 to 2038- a reflection of the national trend of lower birth rates over the past several years, ultimately trickling down to the next generation as this overall lower number of recent new births have children of their own. This decline is projected to be slight, however, with the population estimated to decrease from 2033 to 2038 at a rate of -0.04% per year (0.2% for the entire 5-year period). It is also worth noting that these population changes do not occur uniformly throughout the state. Piscataquis County is projected to be hit particularly hard by population decline, with the Maine State Economist estimating that the county will lose 12.7% of its population between 2018 and 2038. Conversely, during the same period, York County is projected to grow relatively rapidly, increasing its population by 13.6%. Figures 1 and 2 on the next page illustrate the projected trends in population growth statewide and the county-by-county impact through 2038, respectively.

Figure 1: Population in Maine, 2000 to 2038.



Source: 2000 and 2010 from the Decennial Census, 2013 from the ACS 5-Year Estimates, 2018 through 2038 from the Maine State Economist.

Figure 2: Population change from 2018 to 2038, by county.



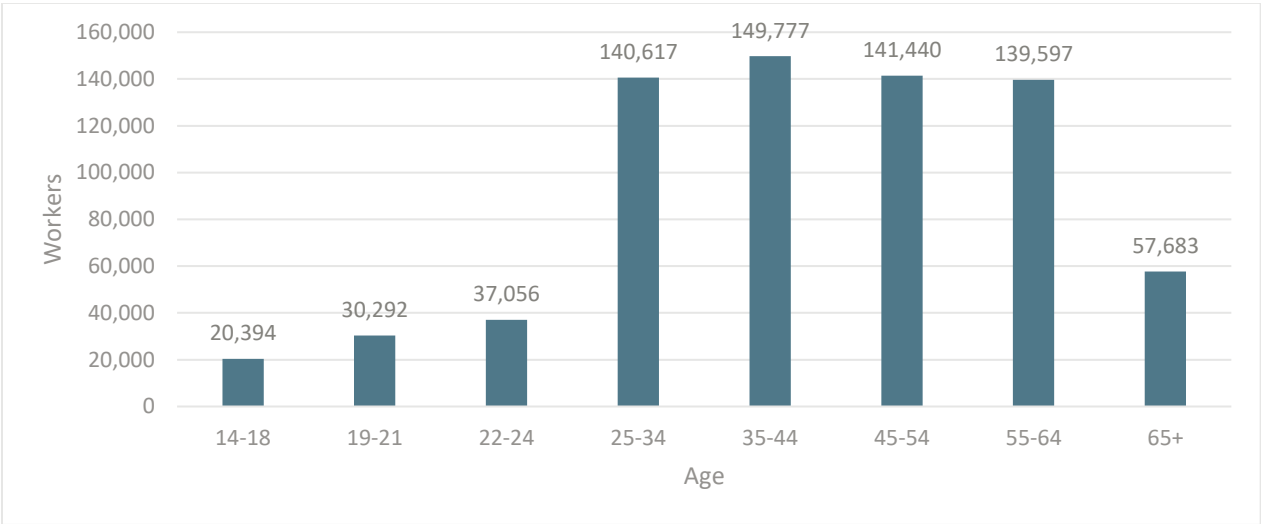
Source: Maine State Economist

Workforce Demographics

In terms of eligible workforce, defined by the Bureau of Labor Statistics as the non-institutionalized, civilian population aged 14 or over, as of 2023 there are 717,000 individuals in the labor pool. Those between the ages of 25 and 64, considered the prime-aged workforce, constitute about 80% of the entire labor force. Maine, similar to the rest of the nation, relies on individuals aged 55 or older to make up a significant portion of the working population: presently 27% of all work eligible individuals. Though hardly a new problem, it is worth noting

that concern over the aging workforce was articulated clearly in several of the one-on-one conversations the team had with employers through the course of this project. Strategies to attract younger workers and a more diverse workforce overall, made up of individuals typically marginalized or participating in the labor force at a much lower rate (for example, individuals with disabilities or justice involved individuals), will be necessary to replace this large percentage of retiring workers in the coming years.

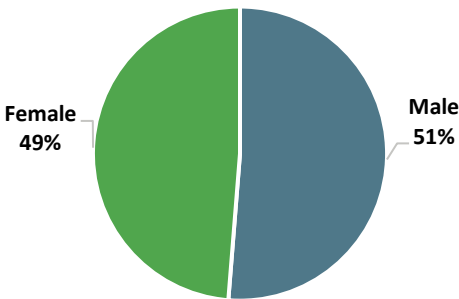
Figure 3: Maine's Work Eligible Population, by Age Cohort



Source: Lightcast 2023.1.

In terms of gender, as reported by Lightcast™, the current distribution of the workforce reflects a more-or-less even split between male and female workers, illustrated in Figure 4 below.¹

Figure 4: Maine workforce by gender.²

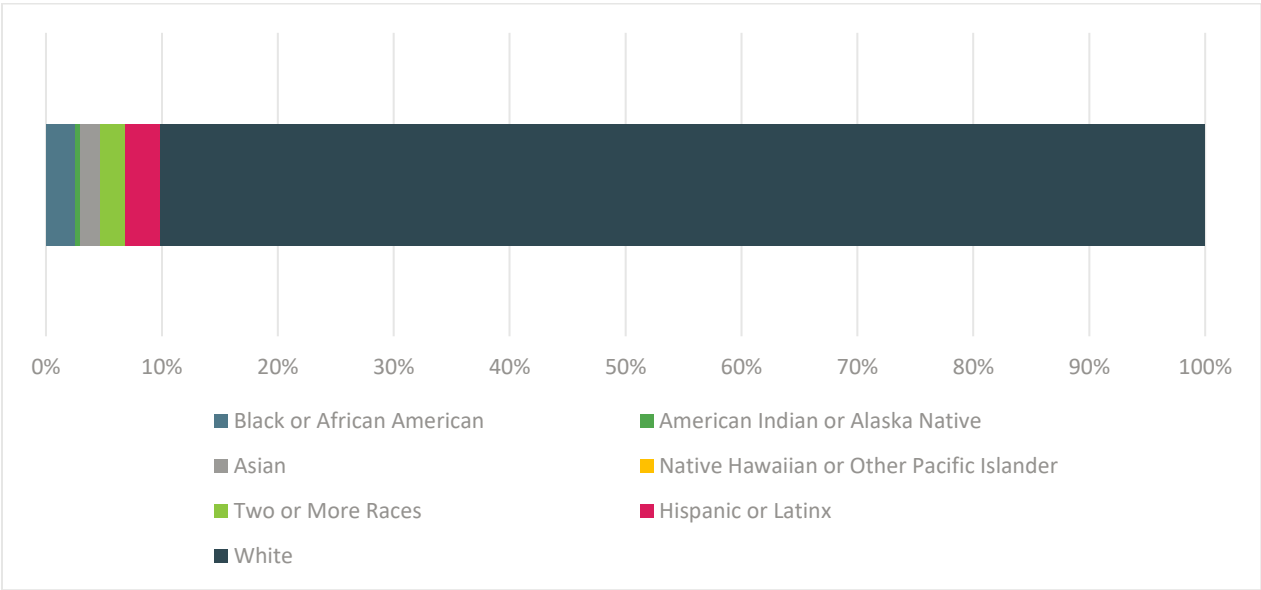


¹ Information on gender is limited to male and female, as reported by Lightcast™. This may undercount or incorrectly assign gender to Two Spirit, nonbinary, transgender, or other gender-diverse individuals.
² Information on gender was limited to male and female, as reported by LightCast™.

Source: Lightcast 2023.1

In terms of race/ethnicity, the current eligible workforce in Maine is predominantly White, sitting at approximately 90%. Black or African American workers represent 2.5% of the workforce, Asian workers account for 1.7% of the workforce, Hispanic or Latinx workers represent 3.0% of the workforce, and workers from two or more races represent 2.1% of the workforce. Native Hawaiians, other Pacific Islanders, American Indian, or Alaskan native represent less than 1% of the workforce. The labor force, while still overwhelmingly White, is more racially diverse than the overall state population, which is 94.2% White.

Figure 5: Maine's workforce by Race/Ethnicity



Source: Lightcast 2023.1

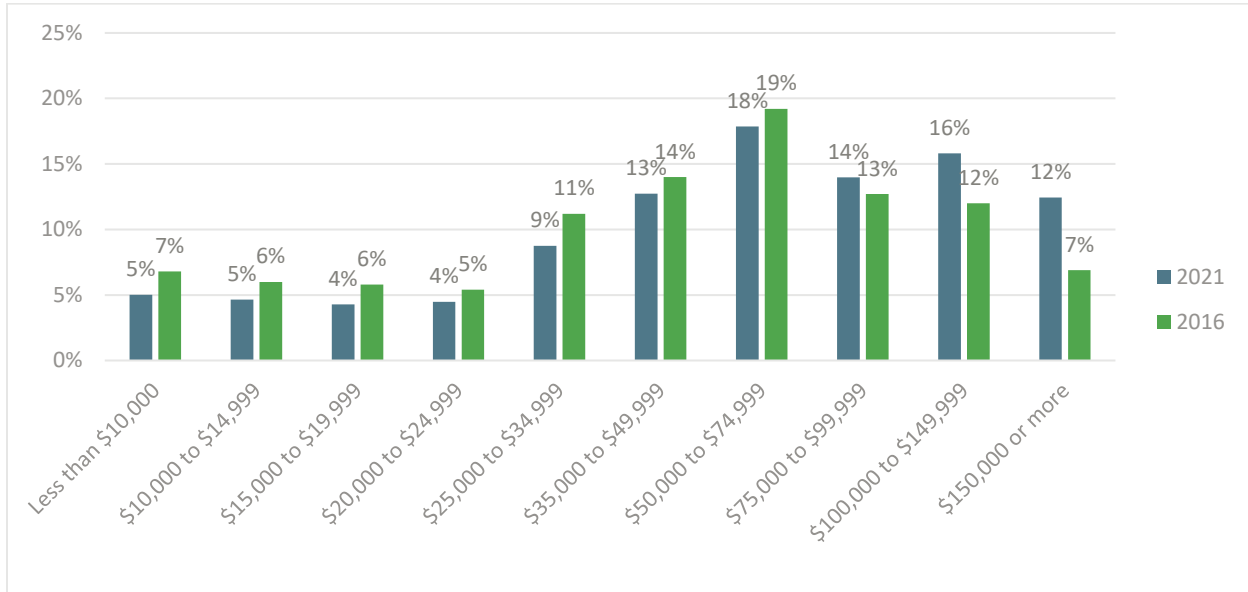
Income and Poverty

Household incomes in the state have risen by nearly 24% during the past 5 years, from a median household income of \$50,826 in 2016 to \$63,182 in 2021. This growth in income closely mirrors changes at the national level, where median household income increased from \$55,322 to \$69,021 (or 25%) over the same period of time. While this wage growth may seem extreme, inflation rose about 18% nationally during this time period. Workers saw an overall increase in real wages over this time period, however, the gains aren't as large as they seem without accounting for inflation.³

As a result of this overall growth in wages, impacted, of course, by both robust growth of open positions and a general decline in the number of people willing to fill them, Maine has seen movement amongst the percent of population by income cohort, as reflected below in Figure 6. Over the 5-year period under review, the percentage of Mainers earning \$100,000 to \$149,999 annually has risen from 12% of the population in 2016 to 16% of the population in 2021. Similarly, the percent of the population earning more than \$150,000 annually nearly

doubled - from 7% in 2016 to 12% in 2021. As might be expected, at the lower end of the earnings spectrum, the percent of the population earning less than \$50,000 fell across the board, with the cohort earning \$19,999 or less seeing a decline of nearly 33% (down from 6% of the population in 2016 to 4% of the population in 2021).

Figure 6: Maine household income, 2021 and 2016.



Source: American Community Survey 5-Year Estimates, 2021.

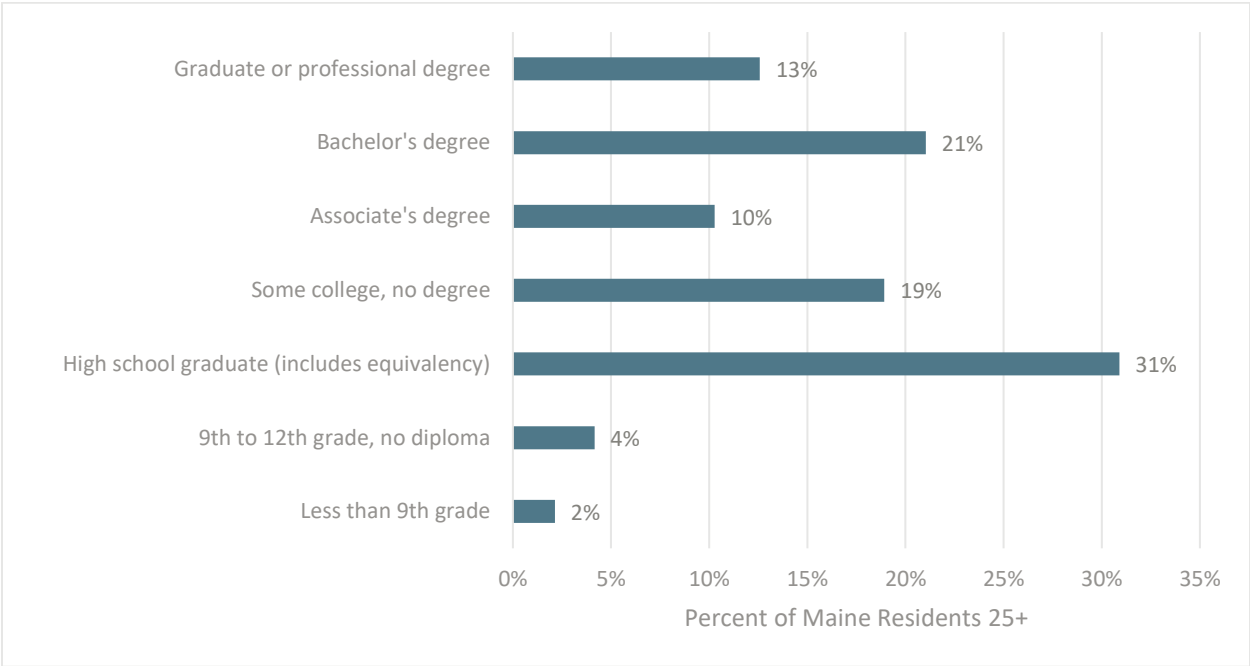
Educational Attainment

The Maine Office of Policy and Management has estimated that of the jobs available in Maine in the year 2025, 60% will require advanced education and training. As a state that has historically had lower higher educational achievement than neighboring states, without a change, there will be a gap in the credentials of the workforce and the needs of employers. To address this gap, the Maine legislature enacted LD 1638 with a goal of having 60% of working-age adults holding a high-value certificate, college degree, vocational education, or other industry-recognized credential by 2025.

Since 2009, Maine's postsecondary educational attainment rate for individuals ages 25 to 64 has increased by 16%, from 39% to 55% in 2021 (see Figure 8).⁴ To better understand the educational attainment of Maine people, this can be further disaggregated by education level. The majority of Maine residents aged 25 years or older have at least a high school diploma (94%), while just over one-third of Mainers have a bachelor's degree or higher.

⁴ When short-term credentials are excluded, Maine's educational attainment rate is 48%.

Figure 7: Educational attainment for Maine residents, ages 25 or older⁵



Source: American Community Survey 5-Year Estimates, 2021.

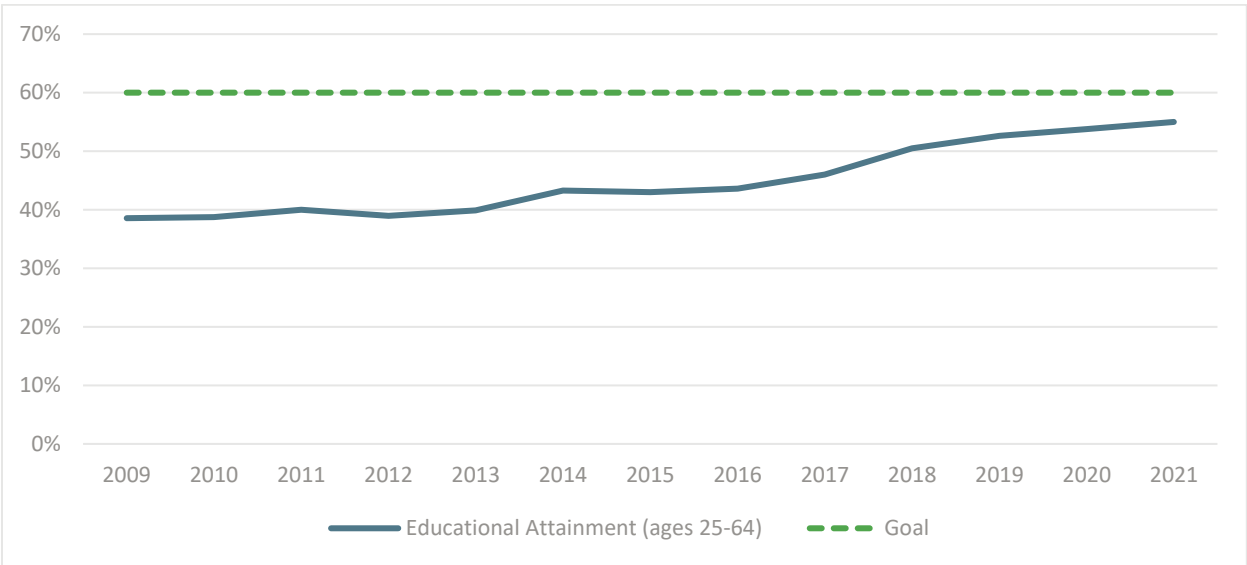
However, large disparities in attainment exist throughout the state. Looking geographically, Cumberland County has the highest postsecondary educational attainment rates for individuals ages 25 to 64, 61% (this does not include short-term credentials). Other counties, such as Somerset and Washington, have educational attainment rates almost half of that, 32%.

Turning our attention to differences by race and ethnicity, Hispanics have the highest postsecondary educational attainment rates for individuals 25 to 64, 58%. This is 25 percentage points higher than the group with the lowest postsecondary educational attainment rates, American Indians or Alaskan Natives.

If these inequities aren’t addressed, then some communities will be equipped to meet the needs of the workforce of the future – generally not just for the MLR sector - while other communities will be left behind.

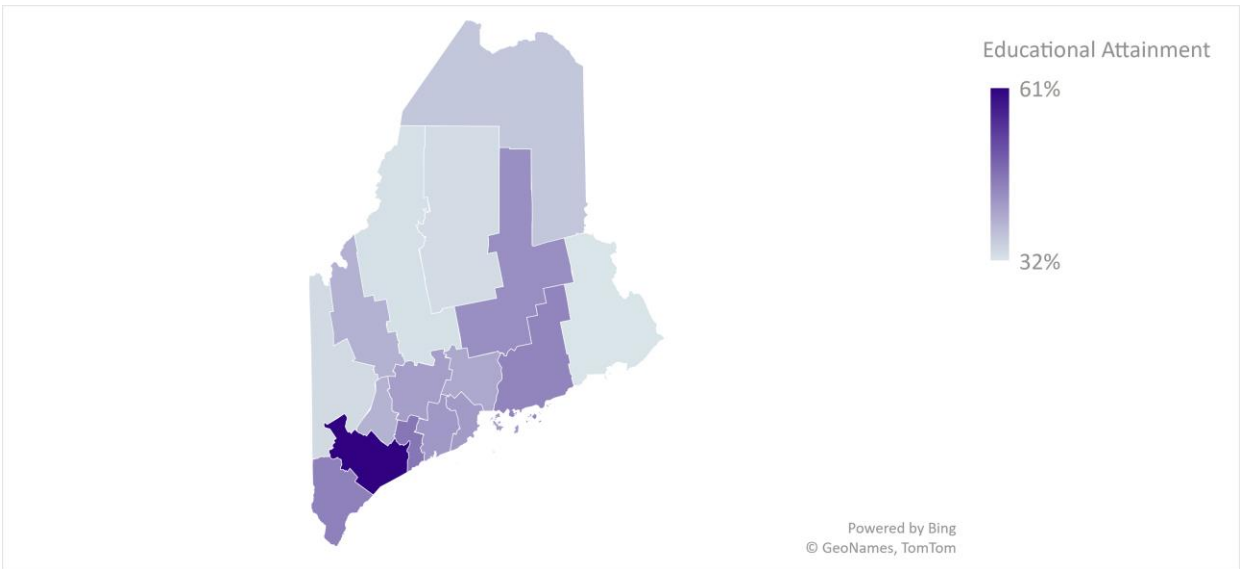
⁵ This excludes short-term credentials.

Figure 8: Postsecondary educational attainment of working age adults in Maine, 2009 to 2021.^{6,7}



Source: Lumina Foundation, Maine report.

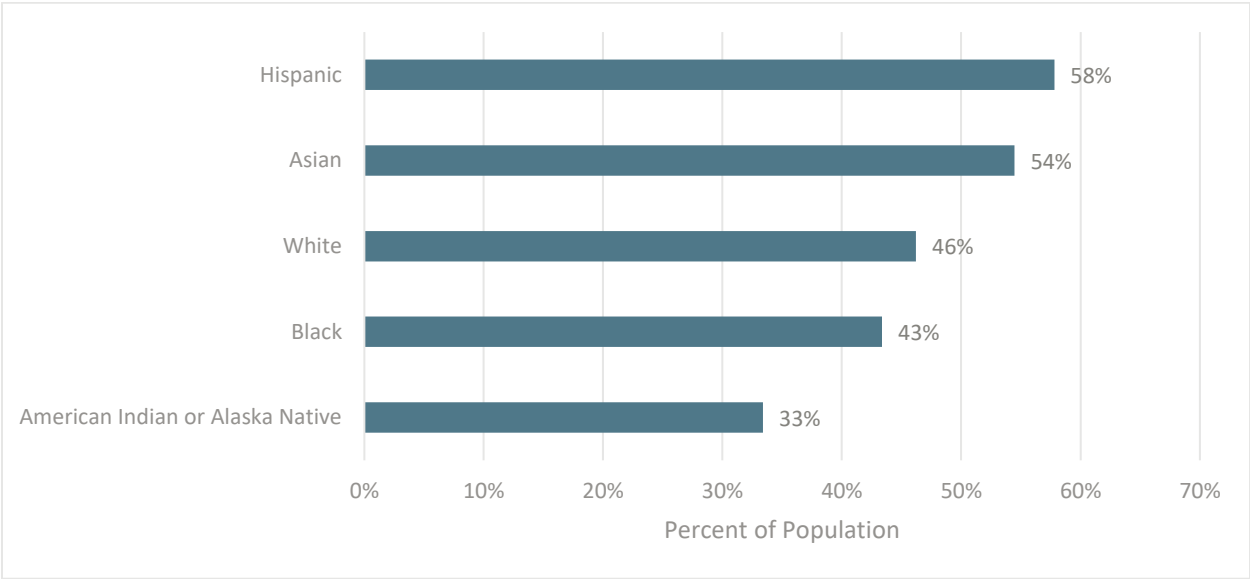
Figure 9: Postsecondary educational attainment by county, 2021.⁸



Source: Lumina Foundation, Maine report.

⁶ This includes graduate or professional degrees, bachelor's degrees, associate degrees, certifications, and industry-recognized credentials.
⁷ 2020 data are omitted. Value shown here for 2020 is the mid-point between 2019 and 2021, used only for graphing purposes.
⁸ Due to data availability, short-term credentials are excluded.

Figure 10: Maine educational attainment by race and ethnicity, 2021.⁹



Source: Lumina Foundation, Maine report.

Labor Force Statistics

Turning now to overall trends in the workforce for Maine, we highlight below the 2 key metrics for gauging the vitality of the labor pool: labor force participation and unemployment rate. Details and full methodology notes on how these rates are calculated, can be found on the official BLS website (https://www.bls.gov/cps/cps_htgm.htm). In simple terms, the labor force participation rate is the ratio of all individuals employed PLUS all individuals not currently working but actively seeking work to the entire work eligible population. The unemployment rate is simply the number of individuals not currently working but actively seeking work, divided by the entire labor force (employed plus unemployed). Though the unemployment rate is the most widely recognized gauge of workforce vitality, the labor force participation rate- which also accounts for the percent of the population NOT working or actively seeking work- is perhaps a better indicator of the underlying strength, or opportunity for improvement, in the state’s workforce.

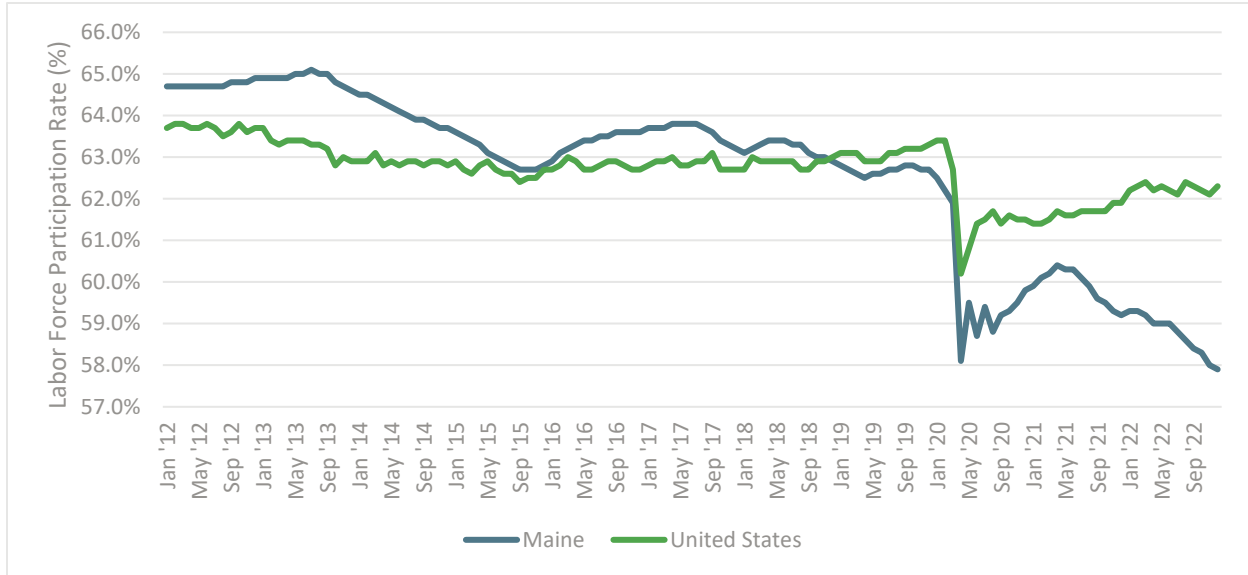
Labor Force Participation Rate

Maine’s labor force participation rate (LFPR) has been on a downward trajectory since August 2017. However, until December 2018, the labor force participation rate in the state was higher than in the United States as a whole. This downward trend was accelerated by the COVID-19 pandemic, during which the LFPR dropped to 58.1% in April of 2020. There was a slight recovery between then and Summer 2021. However, this improvement has proven to be somewhat of a blip in the overall general trend, as the LFPR has continued to drop in recent months, down to 57.9% in December 2022, which is lower than at the height of the COVID-19 pandemic.

⁹ Due to data availability, short-term credentials are excluded.

This consistent, downward trend in labor force participation is an acute concern for employers in the state and reflects both the ongoing exodus of older workers and lower-than-expected rates of workforce participation by younger residents.

Figure 11: Monthly labor force participation rate (seasonally adjusted).

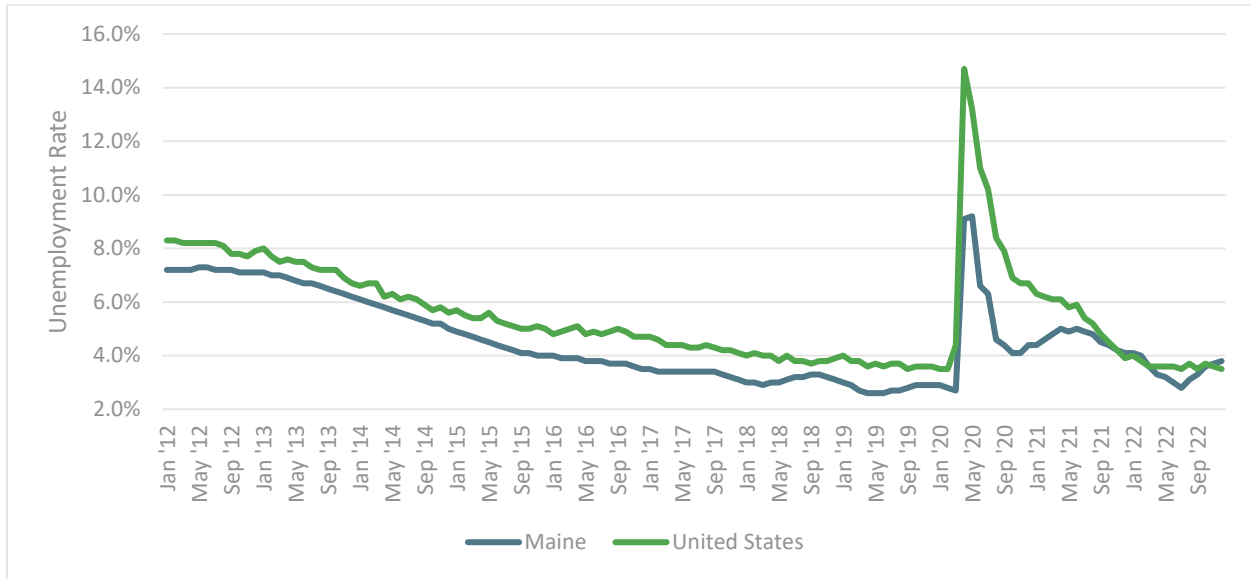


Source: Maine Center for Workforce Research and Information Labor Force Statistics by Geography

Unemployment Rate

Perhaps somewhat less noteworthy, and largely reflective of national trends as well, Over the past ten years, Maine's unemployment rate tended to mirror the trends in the national unemployment rate, though consistently with a rate slightly lower than the national average. However, during the past year or so, there's been more deviation from the national trends. Since March of 2022, the unemployment rate nationwide has remained fairly constant. In Maine, the unemployment rate was decreasing through July 2022, but since then, unemployment has increased gradually by 0.7%, up to 3.5% by September 2022.

Figure 12: Monthly unemployment rate (seasonally adjusted).



Source: Maine Center for Workforce Research and Information Labor Force Statistics by Geography

Top Companies in Maine, by Hiring Volume

By using unique job postings¹⁰ as a proxy for hiring demand, we can understand the top hiring companies in Maine. Six of the top ten hiring companies in Maine are in the medical field or a related field (like Humana, the health insurance company). Two of the top hiring firms has strong ties to Maine's working waterfront, General Dynamics (Bath Iron Works is a subsidiary of General Dynamics) and the University of Maine System.

Figure 13: Companies in Maine with the most unique job postings in the past twelve months.

Company	Unique Job Postings
Maine Medical Center	6,066
Hannaford Brothers Company	2,659
General Dynamics	2,647
MaineGeneral Health	1,897
Walmart	1,713
Central Maine Medical Center	1,626
Northern Light Health	1,496
Walgreens Boots Alliance	1,487
Humana	1,325
University of Maine System	1,264

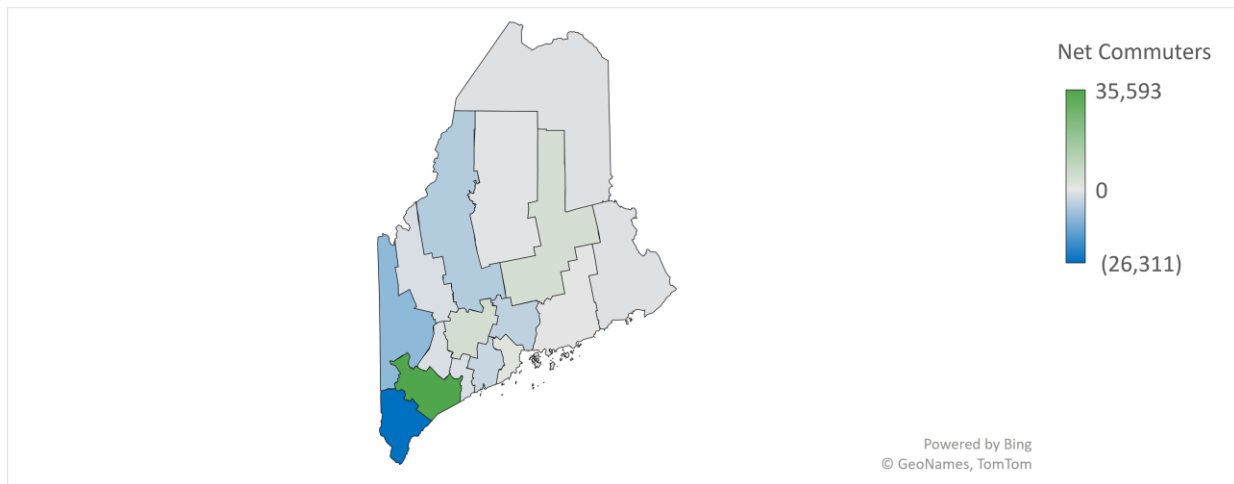
Source: Lightcast 2023.1

¹⁰ Unique job postings are de-duplicated job postings. Postings that list the same job, company, and location are only counted as one unique job posting.

Workforce Commuting Patterns

The number of net commuters is the difference between the number of workers in the region and the employment in a region. If there are more workers than jobs, then net commuting is negative, since workers are commuting in for work. In regions where there are more jobs than workers, the net commuting is positive (workers are coming into the area for work). In the majority of Maine counties, the net commuter is negative, meaning Mainers are leaving their county for work. Of Maine's 16 counties, four have positive net commuters – Cumberland, Kennebec, Knox, and Penobscot counties.

Figure 14: Net Commuters, 2022.



Source: Lightcast 2023.1

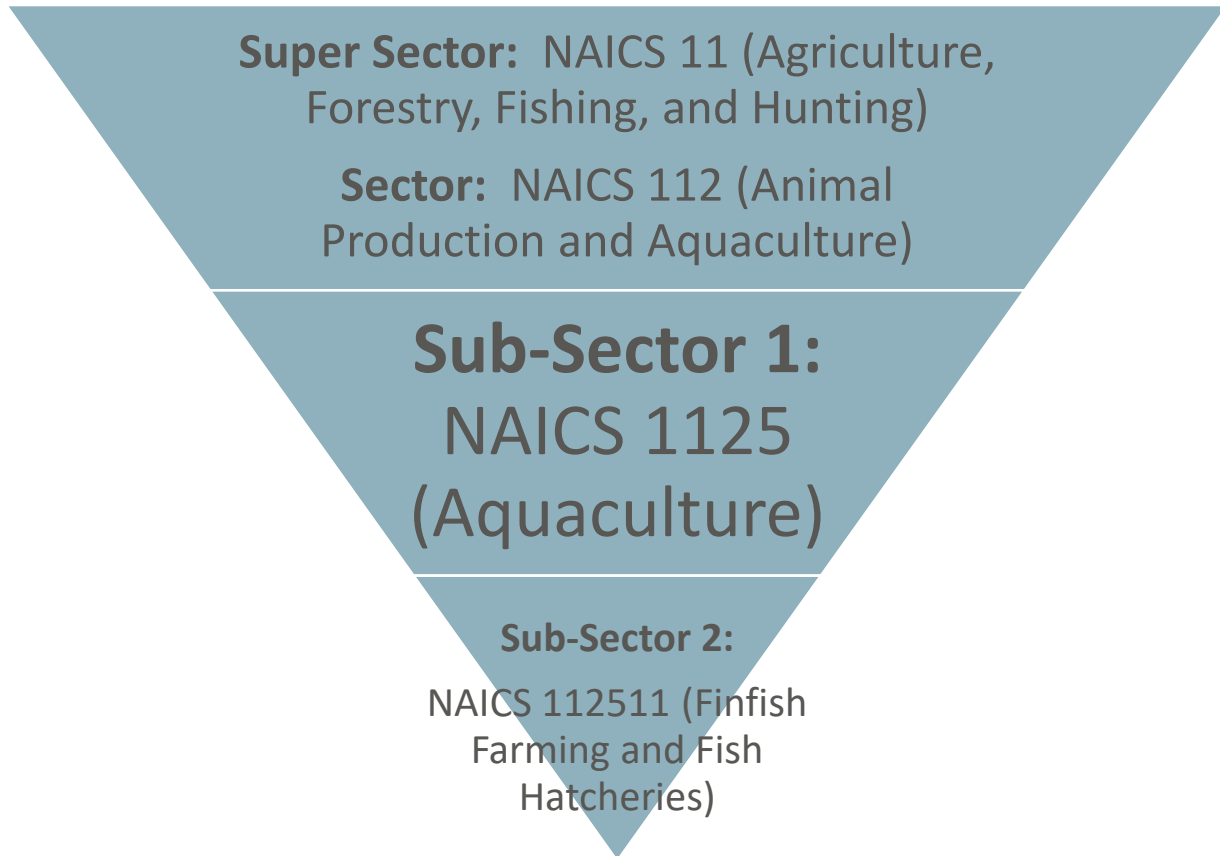
Employment in the Maine Living Resource Economy

Overview: Estimating the number of residents who make their living thanks to the living resources the sea provides is a challenging task. To provide the most accurate number possible, we need to address two distinct challenges- the challenge of *exclusion* and the challenge of *inclusion*. Before exploring these challenges in greater detail, with so many terms, jargon, and lingo interspersed (in a hardly consistent manner) in any discussion or research on industries and employment, the best place to start is with a clear list of terms and definitions that will be used throughout the remainder of this report.

Industry Sector: this term is used to refer to detailed industry descriptions of the service or good produced by a business. Specifically, an industry sector is part of a hierarchical classification schema developed by the federal government as part of NATO, hence its formal name of North American Industry Classification System (NAICS). The terms “Super Sector” “Sector” and “Sub-Sector” are often used interchangeably in popular media but are indeed hierarchical in the formal NAICS classification. In fact, the length of the number in NAICS tells us the level of review- ranging from 2-digit (general) to 6-digit, in terms of specificity. It is important to remember that all NAICS codes “roll up”, so by default a 2-digit code would

include every 3 digit code below it, each 3-digit codes includes every 4-digit below it, etc. For example:

Figure 15: The NAICS Hierarchy, applied to Finfish Farming and Fish Hatcheries



It is important to differentiate between industries and occupations at this point. When we speak of ‘industry employment’ this encompasses all individuals reliant on the specific NAICS sector for their earnings, regardless of the work they perform. An occupation, by contrast, clearly classifies workers by the job functions they perform, which may or may not line up perfectly within a single (or handful) of industries. A good example to consider when gauging occupations is that of the food service worker. A food service worker can be employed in, for example, a restaurant (Industry Sector 72251, Restaurants and Other Eating Places), an on-site cafeteria at a hospital (Industry Sector 62211) or at a college cafeteria (Industry Sector 611310). All these workers are performing very similar, if not identical, job duties but are doing it in 3 very different industry sectors: Restaurants, Hospitals, and Schools.

This distinction is important to remember when reviewing the appendix of this work, where, in a nod to the work of the committee and the previous team of career pathways researchers, we estimate the “core” and “support” occupations that are vital to the Marine Living Resource Economy, without regard to industry sector. Though not central to the current task at hand- defining the MLR cluster and estimating attached employment- this core vs supporting dichotomy does highlight the great deal of overlap between the workers the MLR and its

employers rely on and other, disparate industries within the state- competing for the same type of employees. A lawyer, as but one example, may very well be in great demand within the MLR, but the cluster is competing with virtually every other industry in the state to attract and retain qualified lawyers to their industry's workforce.

Industry Cluster: An industry cluster, by contrast, is a less formal collection of industries sectors, joined by reliance (in full or part) on either each other, a shared use of natural resources, or a specific ecosystem of people, activities, or events for their ongoing operations. There are no formally defined, permanent industry cluster groupings provided or updated by BLS, Census, or BEA (other than the hierarchy of NAICS described above) but rather industry clusters can be defined and delimited by any group of informed stakeholders for a wide range of purposes (career pathway development, joint economic development activities, coordinated outreach campaign, etc.). An obvious example, of course, is the cluster of industries that rely on the marine living resources in Maine, also referred to as the *Marine Living Resources Economy*.

Marine Living Resource Economy: For the purposes of this report, we refer to the cluster of industries that are either primarily (or solely) or partially reliant on the marine living resources of the state of Maine as part of the Marine Living Resource Economy. Within this cluster of industries, we include those that are CENTRAL to the industry, that is, primarily (solely) engaged in the harvesting, processing, or distribution of seafood and seafood products or who service the industry's seafaring and transportation needs. All (100% of) employment in each of these industries is included when calculating the size of the workforce. We also include three PERIPHERAL industries in the cluster, that is, those who rely on the delivery of seafood and seafood products to be sold to their retail consumers, but do not engage solely in the retail sale of products from CENTRAL industries in the clusters. Only a portion of the total employment in these industries can be directly attributed to the sale of marine living resources. Represented graphically below, where:

Light Blue Circle: Represents the Entire Marine Living Resources Economy

Dark Blue Circles: Represent NAICS Sector/Sub-Sectors where employment is entirely dependent of Marine Living Resources, and all jobs fall within the MLR economy (CENTRAL industries)

Yellow Circle: Restaurant and Dining Establishment Industry, where 50% of all jobs are dependent on Marine Living Resources, and, as such, fall within the MLR economy (PERIPHERAL industries)

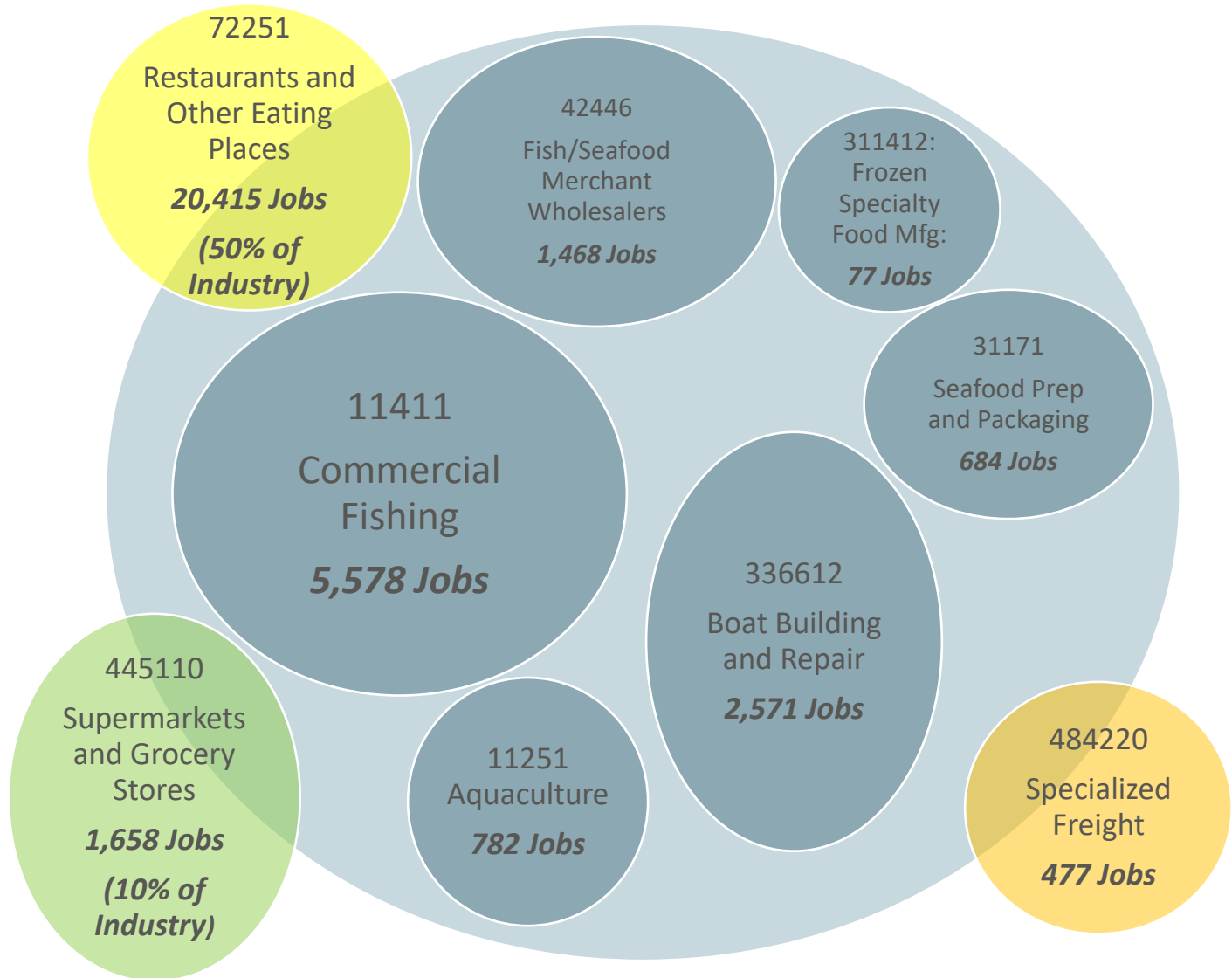
Green Circle: Grocery Store and Supermarket Industry, where 10% of all jobs are dependent on Marine Living Resources and, as such, fall within the MLR economy (PERIPHERAL industries)

Orange Circle: The Specialized Freight Sector is captured here, with 29% of the sector's employment attributable to the Marine Living Resources Economy.

While we breakdown the methodology and specific projections/hires/openings for these industries in greater detail below, for now it is important to point out that, all told, including BOTH payroll employees and self-employed individuals, our estimates place the entire Marine Living Resource Economy's employment at approximately **34,125** with 12,052 in CENTRAL industries (solely dependent on seafood and seafood products for continued employment) and

22,073 in Peripheral Industries (partially dependent on seafood and seafood products for continued employment).

Figure 16: The Maine Living Resource Cluster of Industries and Affiliated Employment, CENTRAL and PERIPHERY (2022 Annual Averages)



Circles are representative of the size of the workforce, but are not drawn precisely to scale

Payroll (or Covered) Employees: These are, quite simply, paycheck earning employees of an industry whose taxes are withheld by their employer and on whose behalf employers make payments to the state's unemployment insurance system (hence they are "covered" should they become unemployed).

Self-Employed: These are individuals who derive their primary, or only, source of income from an industry, but do not receive a traditional paycheck, with taxes collected by the employer on their behalf. Moreover, these individuals, in most instances are NOT covered by unemployment insurance, as employers do not make contributions to a state's UI fund on their behalf. Included in this category are sole proprietors, owner/operators, and 1099 contract employees.

Industry/Occupation Matrix: Because, as discussed above, occupations do not line up perfectly within a single industry, but rather, multiple (or in some cases, all) industries may employ workers with very similar job functions, the Bureau of Labor Statistics publishes a matrix for each industry sector (and sub-sector) that breaks down the top-line employment (as reported in the Venn diagram above, for example) into occupation families, by percent of total industry employment. Knowing the approximate percentage of jobs, as defined by Standard Occupation Classification (SOC) code, that fall within a given industry allows us to apply these matrices to the Marine Living Resources cluster of industries and estimate the current employment, by job type. Full examples of BLS Industry/Occupation matrices can be found here:

<https://www.bls.gov/emp/tables/industry-occupation-matrix-industry.htm>, with the specific matrices used later in this study found in the Appendix.

Standard Occupations Classification (SOC) Codes: Referenced above in the Industry/Occupation matrix definition, SOC codes are developed with funding from the US Department of Labor, in a collaborative initiative with O*NET, to classify and assign codes to all occupations within the NAICS industry schema, as defined by job responsibilities, training, and education requirements. Again, it is important to note that this is an imperfect science, and represents generalizations across occupation families and is not an exclusively exhaustive list of all job functions performed by each individual employed across the entire economy. Obviously, variation in job function can exist not only across industries, but within an industry sector, or even across different employers operating within the same industry sector. SOC's are a useful classification tool, bringing order to what is an extremely chaotic collection of tasks, requirements, and responsibilities.

With these basic definitions in mind, we can turn to the process utilized to estimate the Marine Living Resources Economy's employment, beginning with a clear explanation of the two types of challenges that must be addressed: those of *exclusion* and those of *inclusion*.

The Challenge of Exclusion: The first important decision to make is which industries, precisely, are reliant on the natural sea resources of Maine- in full or in part. Those that rely in full are easier to identify, thanks to the North American Industry Classification System (NAICS). Industries such as Aquaculture, Commercial Fishing, Seafood Prep and Seafood Markets, for example, fall squarely into the "in full" category and all jobs, pay-rolled or otherwise, should be counted as part of the Marine Living Resource economy.

Other industries, however, are not so cut and dry. Clearly supermarkets and grocery stores sell seafood to consumers and some percentage of their employment relies on a vibrant sea resource industry cluster. However, with so many other goods sold in these stores, it is not possible to say that ALL jobs in the industry are reliant on the state's marine-based industry. While it would be ideal if BLS, or the Census Bureau, or the Bureau of Economic Analysis broke

down employment in grocery stores by percent of goods sold, this is too complicated of a task to undertake on a recurring basis, which is the hallmark of the BLS/Census partnership. Instead, decisions must be made, as objectively as possible on, what percentage of employment within these tangential industries should be EXCLUDED from a count of marine living resource dependent employment.

Fortunately, the research team was able to draw on the work of a recently released study on the economic impact of the broader Sea Maine industry cluster and an engaged and informed steering committee to help make these tough decisions. Based on their advice, and applying a reasonable/logical framework to the reported data from BLS, we isolate these tangential industries (those that rely directly on the goods produced by the sea economy, for part, but not all, of the industry's jobs) and exclude an appropriate number of positions from our estimates. **Table I** below isolates these industries with notes on the number of excluded jobs.

The Challenge of Inclusion: The second, easier to address challenge associated with estimating industry employment and forecasting future needs comes from the nature of the employees themselves. The commercial fishing industry has a particularly large number of non-payrolled employees, including owner/operators, 1099, and sole proprietorships that will not appear in any Bureau of Labor Statistics counts of employment. The BLS Quarterly Census of Employment and Wages, commonly considered the gold standard of industry employment counts, relies on each state's unemployment insurance (UI) system, and information submitted by covered employers (those required to pay into the state's UI program) on employment and wages. Non-covered employees- those that are not covered by the state's unemployment insurance program (e.g. contractors or owner/operators) are not included in these counts and, as such, standard reports of industry employment consistently UNDER report the number of people who make their primary living from the sea-based economy.

Fortunately, estimates of the self-employed in these industries are available from non-official sources- such as LightCast™. Drawing on data collected from the American Community Survey, BEA state and local income reports, and county business patterns, Lightcast™ using a proprietary model to distill this information and model, as informed by trends in payroll employment from QCEW, the number of individuals who are self-employed in the industry, including 1099 contractors and owner/operators. These counts were extracted for each industry sector/sub-sector identified above and included in estimates of total employment.

Taken together, challenges of inclusion and exclusion require careful consideration and, most importantly, that sometimes less than purely objective decisions be made. These decisions should be logically sound and defensible, but are not without flaw, and perfect agreement between government sources and independent research teams studying the same phenomenon will never be in perfect alignment. Some degree of error will be included in each, and our schema is no different. The best a researcher team can do is acknowledge its presence, any limitations affiliated, and move forward with the understanding it is a best estimate, given the collection of available information and facts.

The Industries in the Marine Living Resource Economy

With that caveat in mind, we have defined the Marine Living Resource Economy, or cluster of central and peripheral industries reliant in whole or part on the marine living ecosystem, in Table II below. Included in this table are estimates of payroll employment, non-payroll employment, and the table is followed with notes on challenges of inclusion and exclusion, as relevant to each. Our basic building block for this first wave of analysis is the North American Industry Classification System (NAICS), as the best organizing structure to define the Marine Living Resource Economy.

Table 1: Estimates of Employment in the Maine Marine Living Resource Economy, by NAICS Industry Sector

NAICS	Description	2022 Employment, from US BLS	2022 Employment, from LightCast	2022 Self Employment, from Lightcast	Payroll and Self, Total Employment
CENTRAL INDUSTRIES					
11251	Aquaculture*	445	451	331	782
11411	Commercial Fishing	712	725	4,853	5,578
311412	Frozen Specialty Food Manufacturing	77	77	0	77
31171	Seafood Prep and Packaging	678	684	0	684
336612	Boat Building and Repair**	2,532	2,532	39	2,571
42446	Fish/Seafood Merchant Wholesalers	1,280	1,290	178	1,468
445220	Fish and Seafood Markets	397	405	10	415
484220	Specialized Freight***	384	390	86	477
	Sub-Total	6,505	6,554	5,497	12,052
PERIPHERAL INDUSTRIES					
72251	Restaurants and Other Eating Places****	20,327	20,321	94	20,415
445110	Supermarkets and Grocery Stores*****	1,611	1,631	27	1,658
	Sub-Total	21,938	21,952	121	22,073
	TOTAL, CENTRAL & PERIPHERAL	28,443	28,506	5,618	34,125

*As reported by LightCast, includes Animal Production as well as Aquaculture. To remove the number of non-aquaculture related jobs (challenge of exclusion), we applied the BLS ratio of NAICS 11251 (Aquaculture) to NAICS 1125 (Aquaculture and Animal Production) to remove Animal Production employment. This ratio was also utilized to estimate the self-employed count for the industry as well, which was also reported by Lightcast as industry 1125 only.

***Boat building and repair is retained in its entirety, based on limitations encountered in available data on end-user of services in the industry. Research conducted highlighted the diverse nature of the customers served at a typical boat builder/repair site, with an exact breakout of living resources vs. shipping vs. recreational customers unavailable. Given the importance of this industry to the ongoing operation and vitality of the MLR cluster, the decision was made to include all jobs in the industry as part of the broader sector.*

****Estimated that 29% of all industry employment is directly attributable to the transportation of Marine Living Resources, based on in-region (within Maine) industry-to-industry sales for the year 2022. The sales table appears in the Appendix, but in summary, approximately 29% of all Specialized Freight industry sales were made to sectors that could be reasonably attached to the Maine Living Resource Cluster of Businesses, after excluding supply-chain sales to other manufacturers. Assuming a linear relationship between sales and employment, we apply this percentage to the total jobs (1,645) in the industry as well, yielding an estimated count of 477 jobs dependent on MLR.*

*****Estimated that only HALF of all industry employment is directly attributable to the sale of seafood/marine living resources. This seems a reasonable estimate given the abundance of and ready availability of seafood at dining establishments in the state.*

******Estimated that 10% of all industry employment is attributable to the delivery/sale of marine living resources to retail customers. This ratio was established as part of the economic impact study delivered to SEAMaine, following extensive discussion and deliberation. We include it here as our factor for estimating grocery store employment to remain consistent with other work in support of the organization.*

To ensure full transparency in the manner we calculate industry employment- and all the derivatives that follow from this initial tallying of jobs- the table above includes multiple estimates of employees. The first such column, 2022 Employment, from US BLS, reports the 2022 annual averages, as produced by the Bureau of Labor Statistics as part of its Quarterly Census of Employment and Wages (QCEW) program. As discussed earlier, these estimates are for payrolled employees only, eligible (covered) for unemployment insurance in case of job loss. The next column, which closely mirrors the BLS counts, is from LightCast™ directly, with the minor differences caused by estimations/extrapolations based on auxiliary information from LightCast™ economists/modeling. The last column, which captures self-employment only, is also drawn from LightCast™ modeling, and accounts for individuals NOT covered by unemployment insurance and not earning a paycheck with tax deductions managed by the employer. Individuals in this group can be owner/operators or independent contractors.

For the remainder of this study we utilize the totals reported in the final column (Payrolled and Self) which, as the label implies, includes ALL individuals, either self employed or employees, working within the industries. This is the best, truest estimate available of current workforce, without the constraints added by BLS methodology. This column, to ensure consistency, is the sum of the LightCast generated counts, employees and self-employed. As the table highlights, this decision to include non-covered employees is vital for certain industry sub-sectors- most obviously the Commercial Fishing Sub-Sector (11411). With 4,853 of its 5,578 employees in 2022 falling in the self employed category, it is important to note that approximately 87% of all

individuals in the industry do NOT show up in BLS counts of paycheck-earning (covered) employees.

Industries to Occupations

In order to best account for the type and number of occupations that make up the Marine Living Resources Industry Cluster, we rely on the latest industry/occupation matrices produced by the US Bureau of Labor Statistics, as part of their projections program (<https://www.bls.gov/emp/tables/industry-occupation-matrix-industry.htm>). Based on national trends, these matrices lay out, in detail, the percentage of employment within an industry, by job type. LightCast™ also provides detailed reports of industry employment, by occupation, with companion information on turnover, wages, projected growth, hires, automation risk, etc. These industry distributions are modeled on the original BLS tables and, unsurprisingly, closely mirror the source information in terms of percentage of industry, wages, and projected growth. The benefit of using LightCast™, however, is the additional detail it provides in an easily searchable format. For the remainder of this section we will rely on both sources, leaning on the industry distributions provided by BLS and the supplemental information on growth, turnover, wages, and requirements available via LightCast. For ease of interpretation, we also break out our results along the core and periphery dichotomy described in detail above.

All told, in the Core industry sectors, the Industry/Occupation matrices provide employment estimates for 169 unique jobs, with a small number unaccounted for in each industry (if they make up less than 0.1% of all industry employment, they are excluded) while the Periphery industry sectors provide detailed estimates for 46 unique occupations. Full details on each sector, including SOC code, SOC title, and estimated count in Maine appear in the appendix, however, to make analysis and presentation manageable, we focus on the Top 15 jobs by volume in the core category and the top 17 jobs by volume in periphery industries, presented in Tables II and III below (again, full details, disaggregated at the core/peripheral cluster level, for all occupations comprising at least 0.1% of sector employment, appear in the Appendix). Within the core sectors in the cluster, nearly 72.5% of all industry employment (or almost 3 out of every 4 jobs in the cluster) is captured with just the 15 SOC codes that appear in Table II. These positions, taken together, are expected to **grow** by 13% over the next decade, while the other 154, smaller occupations are expected to **contract** by 2%. Growth within these core MLR sectors is driven almost exclusively by gains in these top 15 jobs. ***Taken collectively, the number of jobs (in the MLR core sectors) is expected to grow by 9%, adding 1,091 positions by the year 2033.***

As for the periphery sectors (Groceries, Supermarkets, and Dining Establishments/Restaurants), a similar, even more striking pattern emerges with the largest occupations, by count of employees. The top 17 occupations, presented below in Table III, account for 96.4% of all employment in the industry and, taken collectively, are poised to grow by 10.8% through 2033 while the remaining 31 occupations- accounting for 786 jobs in the MLR cluster- are set to expand at a much more modest rate of 2.4% between 2022 and 2033.

Taken collectively, the number of jobs (in the MLR periphery sectors) is expected to grow by 10.5%, adding 2,313 jobs by 2033.

As a point of reference and a quick reminder, Core sectors include: Aquaculture, Commercial Fishing, Frozen Specialty Food Manufacturing, Seafood Prep and Packaging, Boat Building and Repair, Fish/Seafood Merchant Wholesalers, Fish and Seafood Markets, and 29% of all industry employment in Specialized Freight.

**Table 2: Top 15 Jobs by Number Employed,
MLR Core Industry Sectors**

SOC	Official Description	MLR Cluster Description, as Applicable	2022 MLR Jobs	2033 MLR Jobs, Projected	MLR Percent Change, 2033	MLR Jobs Change, 2033	Average Wages, 2022
45-3030	Fishing and Hunting Workers	Sternman/Deckhand AND Captain/Fisherman	4,768	5,826	22%	1,058	\$42.60
53-7060	Laborers and Material Movers	Doc/Float Worker, Forklift Operators, Loaders/Unloaders (Transportation)	630	651	3%	22	\$16.21
53-3030	Driver/Sales Workers and Truck Drivers	Delivery Drivers, Wholesale and Retail (Route)	559	577	3%	19	\$22.07
11-9010	Farmers, Ranchers, and Other Agricultural Managers	Farm Managers, Hatchery Managers, RAS Production Managers	498	554	11%	56	\$23.61
45-2090	Miscellaneous Agricultural Workers	Farm Hand, Saltwater Marine Technician, Deckhand, Hatchery Technician, RAS Production Technician	326	355	9%	29	\$15.49
51-4120	Welding, Soldering, and Brazing Workers	Shipyard/Boatyard Workers, Factory Maintenance Workers, Drydock/Repair Workers	270	246	-9%	-24	\$23.34
41-4010	Sales Representatives, Wholesale and Manufacturing	Sales Representatives, Wholesale Distribution	242	248	2%	6	\$36.68
51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	Seafood Production Workers, Retail Fish/Seafood Workers	241	225	-6%	-15	\$16.57
51-2090	Miscellaneous Assemblers and Fabricators	Shipyard/Boatyard Workers, Packagers/Product Assembly Workers	178	145	-18%	-32	\$18.68

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51-1010	First-Line Supervisors of Production and Operating Workers	Processing Plant Managers or Boat Building/Repair Supervisors	156	149	-4%	-7	\$32.79
11-9190	Miscellaneous Managers	Commercial Fishing Sector	154	184	19%	30	\$42.83
51-2050	Fiberglass Laminators and Fabricators	Shipbuilders	139	133	-4%	-6	\$20.21
11-1020	General and Operations Managers	GMs, all Sectors	136	136	0%	0	\$47.62
41-2010	Cashiers	Cashiers	126	107	-14%	-18	\$14.08
39-7010	Tour and Travel Guides	Tour and Travel Guides (Commercial Fishing Sector)	118	153	29%	34	\$22.62
Sub-Total		Top 15 Jobs	8,539	9,689	13%	1,150	N/A
Sub-Total		All Other Jobs (154 Occupations)	3,239	3,180	-2%	-59	N/A
TOTAL		All Jobs, MLR Core Cluster	11,778	12,869	9%	1,090	N/A

Table 3: Top 17 Jobs by Number Employed,
MLR Periphery Industry Sectors

SOC	Description	MLR Cluster Description, As Applicable	2022 MLR Jobs	2033 MLR Jobs, Projected	MLR Percent Change, 2033	MLR Jobs Change, 2033	Average Wages, 2022
35-3023	Fast Food and Counter Workers	Fast Food and Counter Workers	5,541	5,953	7%	412	\$14.12
35-2010	Cooks	Cooks	4,059	4,762	17%	703	\$16.15
35-3031	Waiters and Waitresses	Waiters and Waitresses	3,350	3,668	9%	318	\$18.67
35-1011	Supervisors of Food Preparation and Serving Workers	Supervisors of Food Preparation and Serving Workers	1,937	2,243	16%	306	\$21.36
41-2010	Cashiers	Cashiers	1,228	1,131	-8%	-97	\$14.08
35-2021	Food Preparation Workers	Food Preparation Workers	957	1,003	5%	46	\$15.00
35-9021	Dishwashers	Dishwashers	636	697	10%	61	\$13.89
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	633	730	15%	97	\$15.00
53-3030	Driver/Sales Workers and Truck Drivers	Driver/Sales Workers and Truck Drivers	536	647	21%	111	\$22.07
35-3011	Bartenders	Bartenders	470	568	21%	99	\$19.94

WORKFORCE NEEDS ASSESSMENT
SUBMITTED BY THOMAS P. MILLER & ASSOCIATES, LLC

35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	Dining Room and Cafeteria Attendants and Bartender Helpers	449	542	21%	93	\$13.96
53-7060	Laborers and Material Movers	Laborers and Material Movers	428	445	4%	17	\$16.21
11-9051	Food Service Managers	Food Service Managers	347	407	17%	60	\$24.67
11-1020	General and Operations Managers	General and Operations Managers	289	332	15%	43	\$47.62
51-3011	Bakers	Bakers	112	122	9%	10	\$16.19
41-1011	First-Line Supervisors of Sales Workers	First-Line Supervisors of Sales Workers	110	109	-1%	-1	\$27.60
35-9099	Miscellaneous Food Preparation and Serving Related Workers	Miscellaneous Food Preparation and Serving Related Workers	102	120	17%	18	\$14.68
Sub-Total		Top 17 Jobs	21,182	23,477	10.8%	2,295	N/A
Sub-Total		All Other Jobs (31 Occupations)	786	804	2.4%	19	N/A
Total		ALL JOBS	21,968	24,281	10.5%	2,313	N/A

Table IV below lists the top 10 declining and gaining jobs, respectively, within the current array of occupations that make up the core industry sectors of the Marine Living Resource cluster while Table V reports the same information, isolating jobs within the periphery industry sectors.

These projected changes, based historical data that includes known counts of year-over-year changes in employment, industry earnings, and gross regional product, are remarkably robust across industries and locales, across the United States. However, caution should be utilized in interpreting them and best understood as the changes we can expect to see, all else equal—that is, in the absence of unforeseen shocks to the economy (e.g. COVID-19) or an acceleration of trends already in place (e.g. acceleration of AI and automation in the workplace). Industry-specific events, such as an abrupt or significant change in regulatory environment, for example, can also have an impact on the ultimate trajectory of employment. With these caveats aside, the projected changes in employment across the top gainers/decliners within the core and periphery industries in the MLR cluster appear below.

Table 4: Core Industry Sectors, Top/Bottom 10 Gainers, 2022-2033

DECLINING JOBS

GAINING JOBS

SOC	MLR Description (As Applicable)	2033 Jobs Change	SOC	MLR Description (As Applicable)	2033 Jobs Change
51-2090	Shipyard/Boatyard Workers, Packagers/Product Assembly Workers	-32	45-3030	Sternman/Deckhand AND Captain/Fisherman	1,058
51-4120	Shipyard/Boatyard Workers, Factory Maintenance Workers, Drydock/Repair Workers	-24	11-9010	Farm Managers, Hatchery Managers, RAS Production Managers	56
51-2040	Structural Metal Fabricators and Fitters	-22	39-7010	Tour and Travel Guides (Commercial Fishing Sector)	34
41-2010	Cashiers	-18	11-9190	Miscellaneous Managers, Commercial Fishing Sector	30
51-3020	Seafood Production Workers, Retail Fish/Seafood Workers	-15	45-2090	Farm Hand, Saltwater Marine Technician, Deckhand, Hatchery Technician, RAS Production Technician	29
51-9060	Inspectors, Testers, Sorters, Samplers, and Weighers	-12	53-7060	Dock/Float Worker, Forklift Operators, Loaders/Unloaders (Transportation)	22
43-6010	Secretaries and Administrative Assistants	-11	53-3030	Delivery Drivers, Wholesale and Retail (Route)	19
51-4190	Miscellaneous Metal Workers and Plastic Workers	-9	41-9090	Miscellaneous Sales and Related Workers	18
43-5070	Shipping, Receiving, and Inventory Clerks	-7	19-1020	Biological Scientists	14
43-4050	Customer Service Representatives	-7	53-5010	Sailors and Marine Oilers	13

Table 5: Periphery Industry Sectors, Top/Bottom 10 Gainers, 2022-2033

GAINING JOBS

DECLINING JOBS

SOC	MLR Description, As Applicable	2033 Jobs Change	SOC	MLR Description, As Applicable	2033 Jobs Change
35-2010	Cooks	703	51-1011	First-Line Supervisors of Production and Operating Workers	-1
35-3023	Fast Food and Counter Workers	412	41-9090	Miscellaneous Sales and Related Workers	-1
35-3031	Waiters and Waitresses	318	29-1051	Pharmacists	-1

35-1011	Supervisors of Food Preparation and Serving Workers	306		41-1011	First-Line Supervisors of Sales Workers	-1
53-3030	Driver/Sales Workers and Truck Drivers	111		53-1047	First-Line Supervisors of Transportation and Material Moving Workers	-1
35-3011	Bartenders	99		43-1011	First-Line Supervisors of Office and Administrative Support Workers	-2
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	97		43-5071	Shipping, Receiving, and Inventory Clerks	-2
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	93		51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	-4
35-9021	Dishwashers	61		43-4051	Customer Service Representatives	-8
11-9051	Food Service Managers	60		41-2010	Cashiers	-97

Turning now to the full collection of occupations within the Core and Periphery sectors of Marine Living Resource Cluster, beyond the “Top Lists” featured above, Figures 17 (Core) and 18 (Periphery) below presents 4 important, and inter-related, pieces of information:

Employment: Represented as the Blue Bar, captures all payrolled employees and non-payrolled contractors/owner operators, projected through the year 2033

Hires: Represented as the Green Bar, captures all new hires within the year, as reported by LightCast™

Separations: Represented as the Red Bar, captures all employee/non-employee separations within the given year, also as reported by LightCast™

Weighted Hourly Wage: Represented by the Yellow Line (tied to the right-side wage scale on the graph). Calculated by 1. multiplying the reported average hourly wage for each occupation by the number of employees in said occupation, 2. Summing this number, across all 169 occupations in the core sector and 3. Dividing this number by the total number of jobs across all occupations. What results is an average hourly wage for the years 2010-2021 that accounts for the volume of employees in each job, allowing jobs with more employees (e.g “Fishing Workers”) to more heavily factor into total industry wages than those with fewer employees (e.g. Chief Executive Officers).

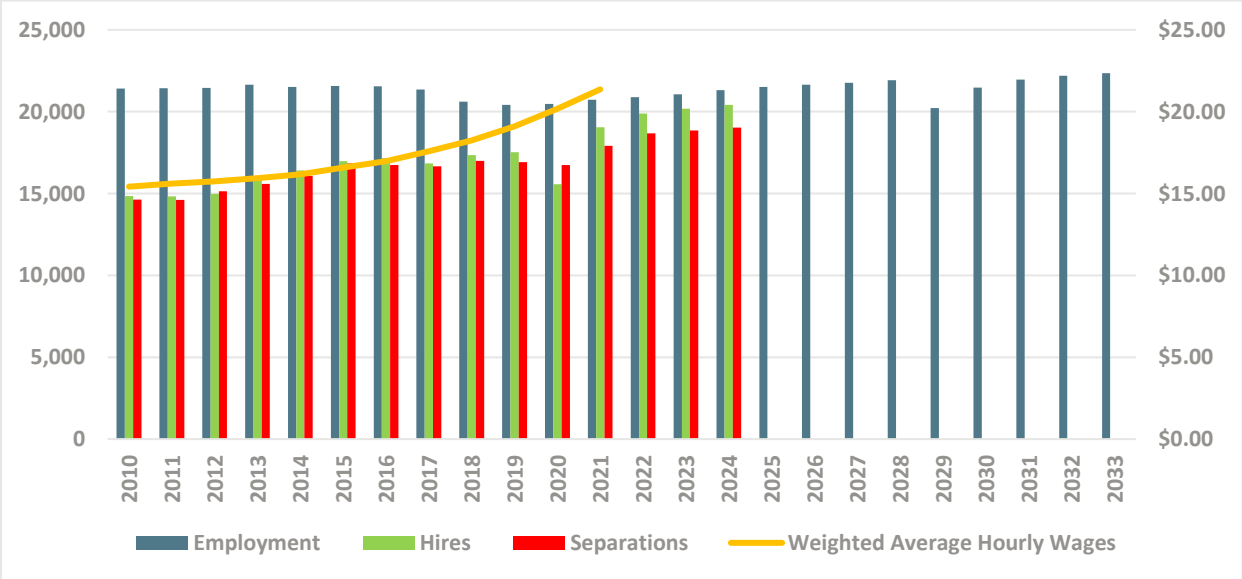
What emerges is a relatively consistent picture of employment in the core sectors of the MLR Cluster. In each year except 2012, the industry hired more employees than it lost (separations), and saw consistent, linear growth in overall employment from 2010-2023, with the exception of the 2020, during the peak of the COVID-19 pandemic. Wages have also trended steadily upward, increasing roughly 37% between 2010 and 2021.

Figure 17: Total Employment, Hires, and Weighted Hourly Wages
All Occupations, Core Sectors of MLR Cluster



The peripheral sectors, by contrast, show a great deal more volatility in terms of hires/separations. While retention in these sectors has, according to Figures XI and XII, always lagged the core sectors of the MLR cluster, from 2022 onward the number of new hires annually has approached parity with total employment- highlighting a rapid rise in turnover with the onset (and presumed end) of the COVID-19 pandemic. Perhaps unsurprisingly, the wages paid in these peripheral sectors also consistently lag wages in the core sectors, even when controlling for the number of individuals in entry-level, lower wage roles (weighted salary averages).

Figure 18: Total Employment, Hires, and Weighted Hourly Wages
All Occupations, Periphery Sectors of MLR Cluster



Digging a little deeper into the rate of new hires in both the core and periphery sectors, Tables V and VI below show the ratio of hires to total employees, based on the same data used in the graphs above. 2012 marked the lowest ratio over the last decade for the core sectors, with just over half- 55.7%- of all employees hired within the current year. This ratio was increased over the last 3 years, rising from 60.4% of all employees in 2019 to nearly 2/3 of all employees - 65.9%- hired within the current year in 2022. The table also includes year-over-year increases in weighted hourly wages, as a juxtaposition to the ratio of new workers. Though annual increases did slow markedly in 2021 vs. 2020, the last 3 reported years accounted for a cumulative increase in wages of 12.7%. While 2022 data has not yet been released as of this writing, it is a safe assumption, given the backdrop of increased inflation, that these wages likely spiked again.

As alluded to above, and spelled out in Table VI below, the periphery sectors have seen much more volatility in staffing, with 2018 marking a watershed year for this group, where the ratio of new hires to total employees jumped to 84.2%, remaining solid with short respite as COVID 19 hit in 2020 as the essential sector of Grocery Stores and Supermarkets became one of the least susceptible industries to mandated shutdowns. However, this respite proved short-lived and by 2021, the number of new hires made up 91.9% of the workforce- where just over 9 out of every 10 employees in the peripheral sectors were hired in 2022.

**Table 6: Hires to Employment Ratio, Annual Percent Change in Wages
Core Industry Sectors in MLR Cluster**

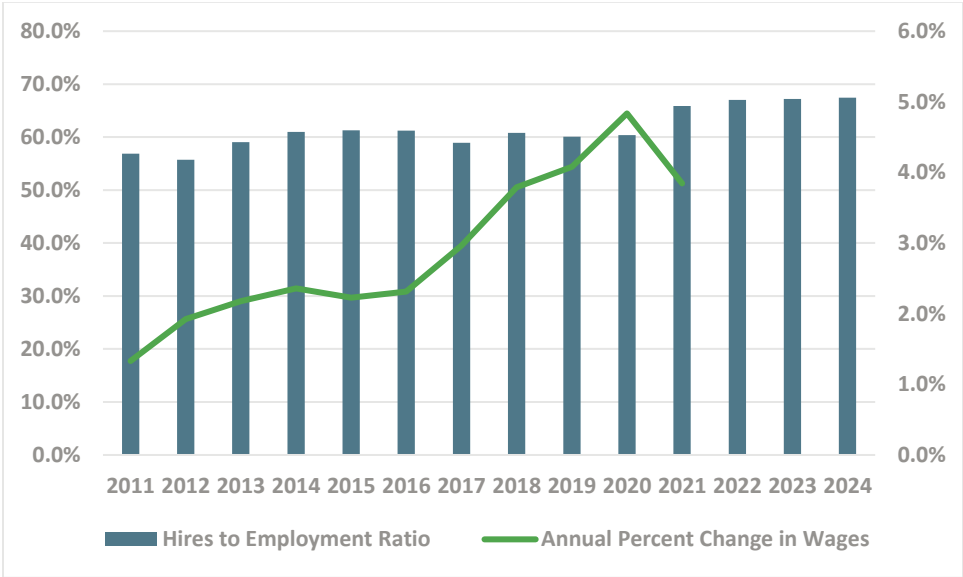
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Hires to Employment Ratio	56.9%	55.7%	59.0%	61.0%	61.3%	61.2%	58.9%	60.8%	60.1%	60.4%	65.9%
Annual Percent Change in Wages	1.3%	1.9%	2.2%	2.4%	2.2%	2.3%	3.0%	3.8%	4.1%	4.8%	3.8%

**Table 7: Hires to Employment Ratio, Annual Percent Change in Wages
Periphery Industry Sectors in MLR Cluster**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Hires to Employment Ratio	69.2%	69.9%	73.9%	76.3%	78.6%	79.7%	78.8%	84.2%	85.8%	76.0%	91.9%
Annual Percent Change in Wages	1.27%	0.83%	1.23%	1.49%	2.51%	2.39%	3.61%	3.72%	4.68%	5.68%	5.86%

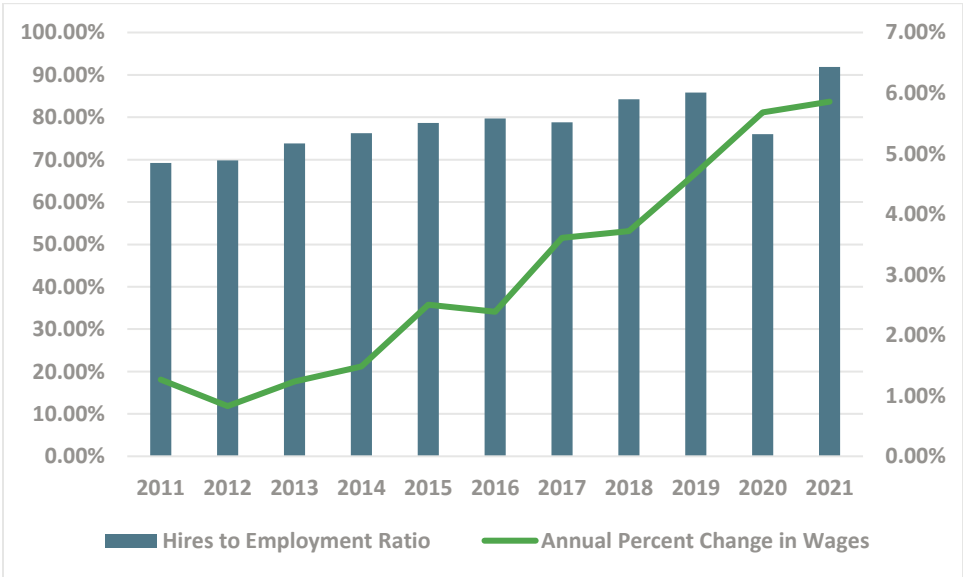
Represented graphically, Figures 19 and 20 below graph the relationship between wages and new hire ratio. Again, perhaps predictably, when we do see dips in annual average wages, it is driven by a commensurate spike in new employees with the core sectors.

Figure 19: Hires to Employment Ratio and Annual Percent Wage Increases, Core Industry Sectors



Conversely, and as a function no doubt of the high turnover in the peripheral sectors, we do see a spike in wages over the last several years in these sectors, as the industries- plagued with high turnover, responded (predictably) with higher wages to attract and retain staff.

Figure 20: Hires to Employment Ratio and Annual Percent Wage Increases, Periphery Industry Sectors

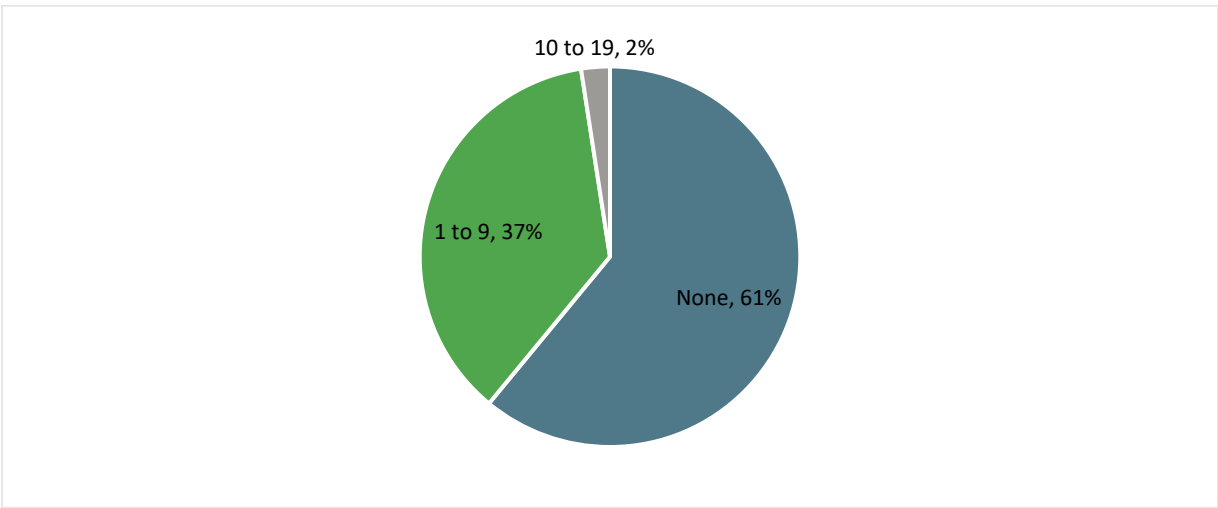


SKILLS GAP ANALYSIS

Employment Needs in the Marine Living Resource Economy

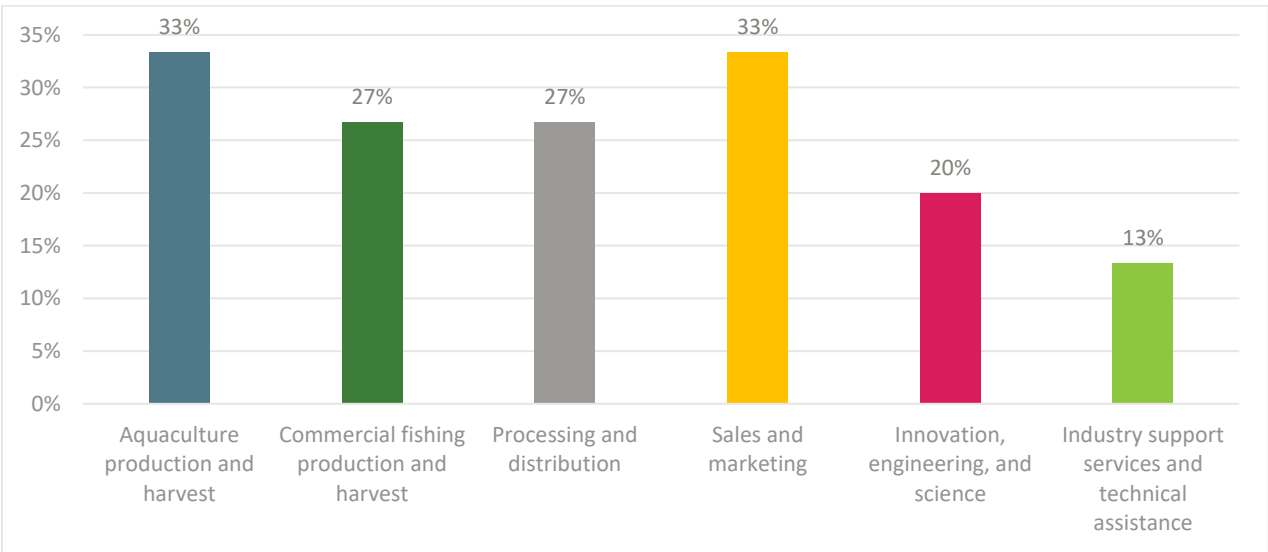
Based on responses to the survey, the majority of employers in the MLR economy are not planning on hiring in the next year (see Figure). For those who are planning on hiring, most are looking to fill between one and nine positions. In terms of occupation breakdown, Figure below illustrates the type of jobs that employers who are planning on hiring, are seeking to fill. Respondents could select more than one occupation family; percentages reflect the overall number of respondents indicating a need for each category.

Figure 21: Employer responses to the survey question, "How many unfilled, open positions is your organization seeking to fill in the next year?".



Source: Maine Seafood Industry Employer Survey

Figure 22: Occupation families that best match the positions needing to be filled.



Source: Maine Seafood Industry Employer Survey

According to employers, these fast-growing occupations include both entry-level and more advanced positions. For example, sternmen/deckhands and captains/fishermen both fall into the occupation of “Fishing and Hunting Workers.” While sternmen and deckhands are entry-level positions that involve on-the-job training, fulfilling the role of a captain requires experience and licensure. Providing an adequate supply of workers for these roles will require equipping more individuals with the boat handling, navigation, and fishing skills. Finding individuals with these skills was noted as a challenge in the stakeholder interviews, providing further support of this need. Workforce programs for the MLR economy should target these knowledge gaps.

A talent pipeline for aquaculture workers and their managers also needs to be established to ensure the workforce has the required skills needed to meet the growth within the next five years. Most aquaculture worker roles are entry-level. However, workers must be comfortable working on the water and performing physical labor. As with the Fishing and Hunting workers, many of these roles require boat handling and navigation experience. Manager positions require experience and often require technical skills in the sciences. Stakeholders noted the value of good farm managers and the difficulty in replacing them. Given the training and experience required to fill this role, the MLR economy needs to consider building out training programs that will grow the pipeline for the farm manager roles.¹¹

In-Demand Employability Skills

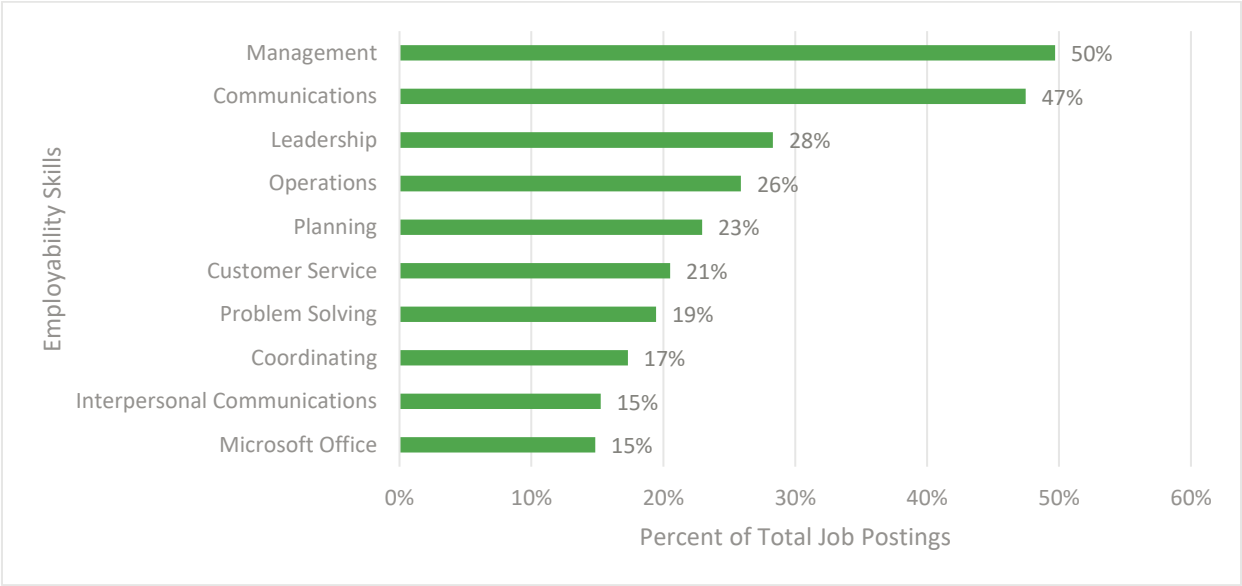
For all occupations in the MLR economy, the most in-demand employability skill was communication, appearing in 42% of total job postings over the past twelve months. Customer service, management, and sales were also highly in-demand, appearing in over 30% of job postings.

The top employability skills for core and support occupations can be seen below in Figure and Figure . There’s significant overlap in the employability skills desired by employers for these two sets of occupations.

Survey participants were asked what credentials and certifications they look for when screening job candidates. While the intention was to collect data on in-demand technical skills and education, many of the responses were about the basic employability skills they screen for. Top responses include sobriety/ability to pass a drug test, experience, and work ethic. While this provides valuable anecdotal information about the employability skills sought after by employers, readers should use caution when generalizing to the whole industry, due to the low number of respondents.

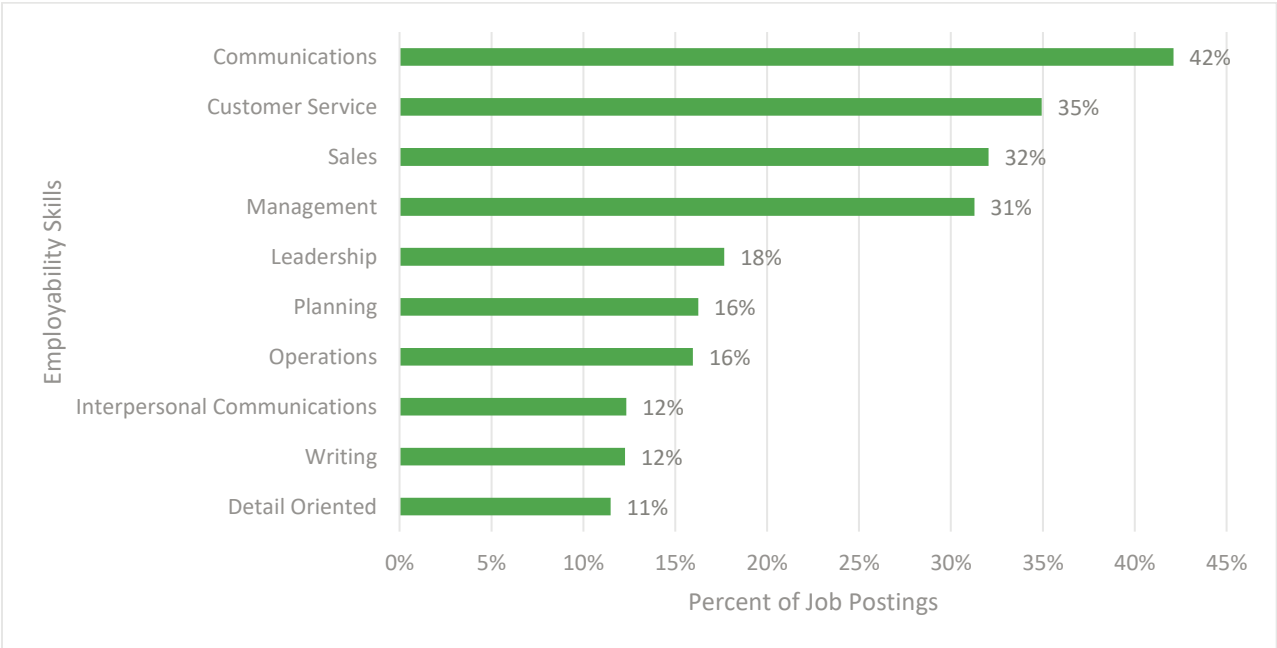
¹¹ The Maine Shellfish and Seaweed Aquaculture Apprenticeship program will help fill this gap. However it’s unlikely that that one program will train enough workers to fill the need. Further, this apprenticeship program does not train finfish aquaculture workers.

Figure 23: Top 10 most in-demand employability skills in core occupations over the past twelve months.



Source: Lightcast 2023.1

Figure 24: Top 10 most in-demand employability skills in support occupations over the past twelve months.



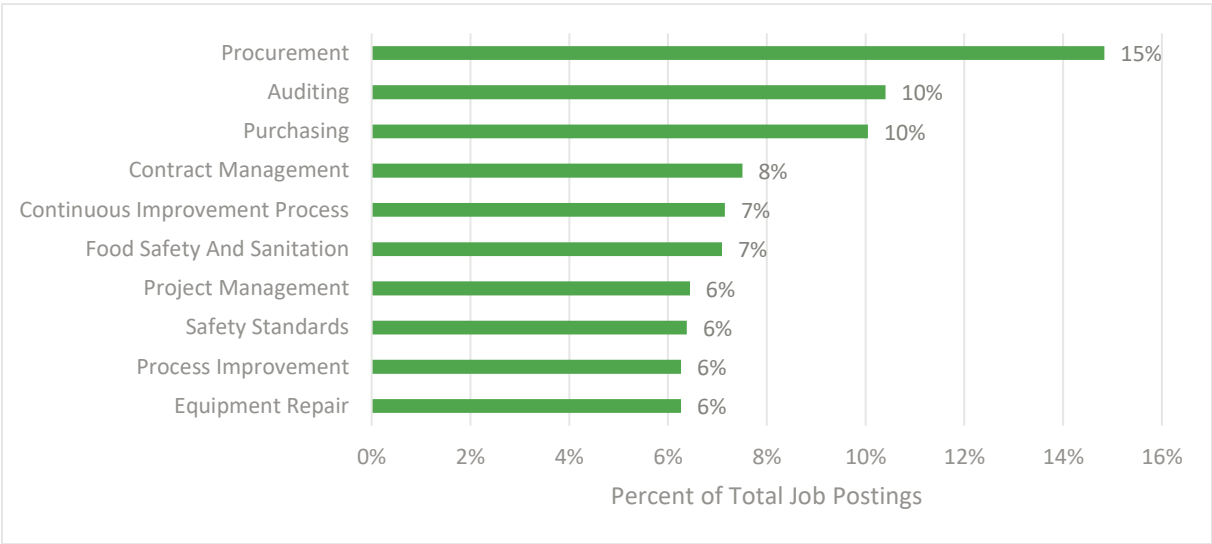
Source: Lightcast 2023.1

In-Demand Technical Skills

There is less overlap in the technical skills required for core and supporting occupations. For the core occupations, most of the top skills were related to the processing and distribution

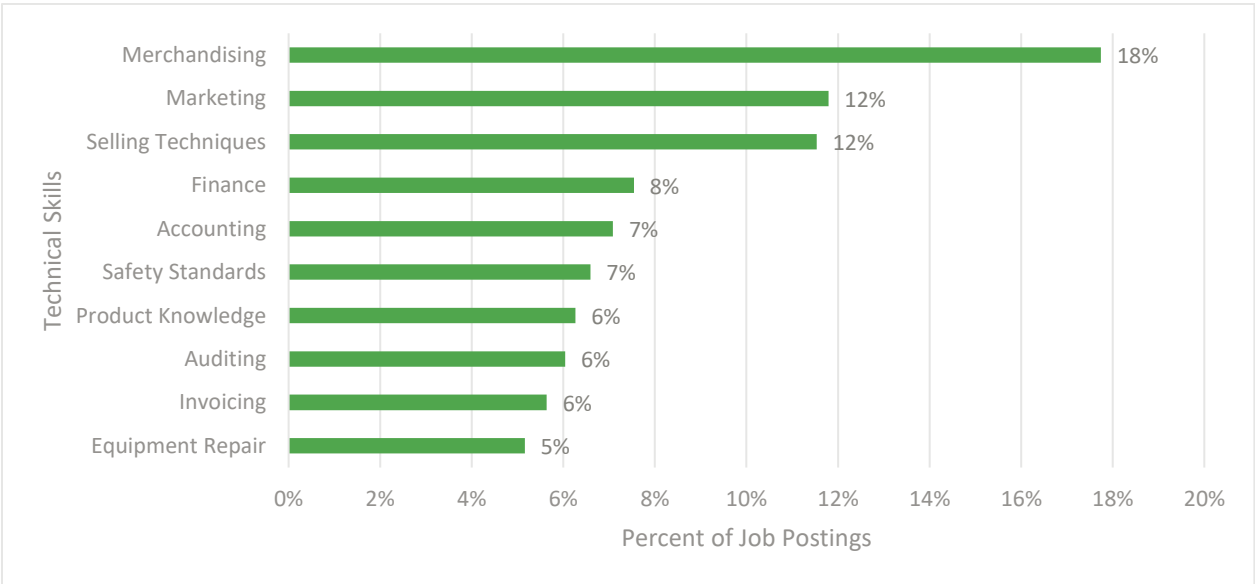
sector, such as procurement, auditing, purchasing, and food safety and sanitation. Among the support occupations, the most in-demand skills were related to sales and marketing, such as merchandising, marketing, and selling techniques.

Figure 25: Top 10 most in-demand technical skills in core occupations over the past twelve months.



Source: Lightcast 2023.1

Figure 26: Top 10 most in-demand technical skills in support occupations over the past twelve months.

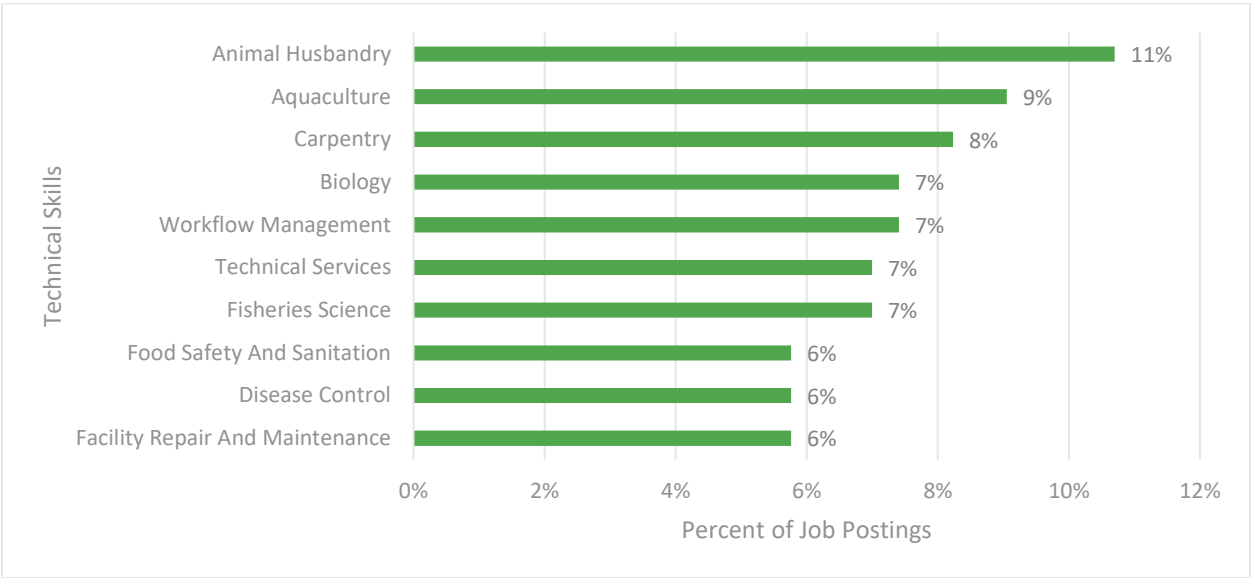


Source: Lightcast 2023.1

To gain a better understanding of the technical skills required for the just commercial fishing and aquaculture jobs, the same analysis as above was repeated. However, the occupations

were limited to Farmers, Ranchers, and Other Agricultural Managers (11-9013), First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011), Farmworkers, Farm, Ranch, and Aquacultural Animals (45-2093), Fishing and Hunting Workers (45-3031). The top technical skills can be seen below in Figure . Workforce programming should be designed with these skills in mind, in order to meet the future needs of the MLR economy.

Figure 27: Top 10 most in-demand technical skills in aquaculture or commercial fishing occupations over the past twenty-four months.



Source: Lightcast 2023.1

Education and Training Requirements

Jobs within the MLR economy have a variety of different education and training requirements. The required education aligns with the traditional education levels, such as high school diploma or a Bachelor’s degree. Typical on-the-job training is made up of six categories: internship/residency, apprenticeship, short-term, moderate-term, long-term, and none. Short-term training is one month or less. Moderate-term is between one month and 12months. Long-term is defined as training that is more than 12 months.

Required education for entry-level positions in the core occupations ranges from no formal education to a bachelor’s degree. The more entry-level roles tend to have more on-the-job training, since they often require minimal or no prior work experience. However, jobs that don’t require formal education may still require training. The managerial and supervisory roles tend to have no on-the-job training. Instead, prior experience and/or education is required.

For the top growing supporting occupations, there’s more variation in the typical education and training, as these cover a wider range of industries and occupations. The required education varies from a high school diploma to a doctoral or professional degree, while training varies from none to an apprenticeship.

The variation in required education and training is beneficial for workers, as it means there's an occupation that they could hold in the MLR economy, regardless of educational attainment or experience. When considering the talent pipeline for the MLR economy, the amount and type of on-the-job training must be considered.

Table 8: Typical education and training required for an entry-level position for core occupations in the Marine Living Resource economy.¹²

SOC	Description	Typical Entry Level Education	Typical On-The-Job Training	Work Experience Required
11-9013	Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	None	5 years or more
11-9041	Architectural and Engineering Managers	Bachelor's degree	None	5 years or more
13-1028	Buyers and Purchasing Agents	Bachelor's degree	Moderate-term on-the-job training	None
19-4099	Life, Physical, and Social Science Technicians, All Other	Associate's degree	None	None
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	None	Less than 5 years
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	No formal educational credential	Short-term on-the-job training	None
45-3031	Fishing and Hunting Workers	No formal educational credential	Moderate-term on-the-job training	None
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	None	Less than 5 years
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	No formal educational credential	Short-term on-the-job training	None
53-7199	Material Moving Workers, All Other	No formal educational credential	Short-term on-the-job training	None

Source: Lightcast 2023.1

¹² To see corresponding MLR occupations, see Table 1.

Table 9: Typical education and training required for an entry-level position for top growing occupations in the Marine Living Resource economy.¹³

SOC	Description	Typical Entry Level Education	Typical On-The-Job Training	Work Experience Required
11-2021	Marketing Managers	Bachelor's degree	None	5 years or more
11-3031	Financial Managers	Bachelor's degree	None	5 years or more
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	None	None
13-2051	Financial and Investment Analysts	Bachelor's degree	None	None
23-1011	Lawyers	Doctoral or professional degree	None	None
25-1099	Postsecondary Teachers	Doctoral or professional degree	None	None
47-2111	Electricians	High school diploma or equivalent	Apprenticeship	None
51-4041	Machinists	High school diploma or equivalent	Long-term on-the-job training	None
53-3031	Driver/Sales Workers	High school diploma or equivalent	Short-term on-the-job training	None
53-7065	Stockers and Order Fillers	High school diploma or equivalent	Short-term on-the-job training	None

Source: Lightcast 2023.1

INDUSTRY EMPLOYER ENGAGEMENT

Working in close collaboration with SEAMaine, TPMA consultants developed a survey to collect information from employers in the MLR economy. This survey was distributed by SEAMaine to respondents of a previous workforce survey in February 2023. It was designed to collect information on workforce education and training programs. In total, 46 individuals responded. After removing blanks and protest responses, data from 45 responses were analyzed for this report. Findings from the survey have been incorporated into the other sections of the report. A full summary of the survey results can be found in Appendix II.

Additionally, the team from Camoin Associates conducted twelve one-on-one interviews with MLR employers and their representatives. A summary of the findings and trends they detected appears below.

¹³ To see corresponding MLR occupations, see Table 7 in Appendix I.

Challenges

- COVID impacted industries in a variety of ways including workforce – getting people, getting them to show up, loss of restaurant markets.
- Recruiting/retaining workforce overall was a challenge. In general, companies found it more challenging to find seasonal workers than full-time. In general, the larger the company, the more workforce was cited as a major challenge, particularly for production and processing jobs. Smaller companies did have challenges as well, but it was typically for skilled positions.
- The seasonality of fishing and aquaculture seasonality make it difficult to provide year-round employment – this means job seekers may rule out openings because they are looking for full-time work.
- Housing is a major issue negatively impacting employers' ability to get and keep workers, and it was mentioned by nearly every interviewee as a significant challenge to the workforce. Almost all of the companies operate close to the shoreline if not on it. Some are in small, rural communities along the coast which have limited affordable housing options (both ownership and rental). Those in more populated areas in southern Maine have more options, but housing prices are higher than what most average wages in the industries can support.
- Wages: It can be difficult to pay wages that compete with alternatives including skilled trades like carpentry.
- Transportation: Lack of transportation options further constrains workforce opportunities. Combined with housing, it can be challenging to live near job sites and commute to work.
- Awareness of job and career opportunities: There remains a lack of understanding of what the key occupations and skills are and the opportunities they present to jobseekers at all age levels.
- Getting into high schools to provide awareness of industry and jobs can be challenging and was made even more so during COVID as many schools did not allow in-person visitors. It has improved but is still a challenge.
- Finding business services with people that know the industry can be difficult in rural areas, such as consultants, lawyers, and accountants.
- Regulatory environment: The regulatory environment, specifically licensing by the state, is backlogged and slow and constraining industry growth. There is a need for more staff capacity at the state to support quicker review and permitting. This would also create demand for additional workers in the industry.
- Lobstering is under threat because of warming waters, regulations, market conditions

Growing & Harvesting

- Working on the water is not for everyone; employers have to find the right people. Workers must be willing to work outside on the water and perform physical labor, as well as being comfortable in and around boats/barges and navigating coastline for many positions. In fact, these are the hardest skills to find for many of the harvesters.
- Aquaculture firms that have hatcheries need technical skills in sciences, including marine science, biology, and chemistry.

- Farm managers are highly valued and can be very tough to replace.
- Firms that have pens (such as lobster and on-land aquaculture) need skills in mechanical systems, facilities operations, electricians, trades.
- Smaller firms cite challenges with finding business management, accounting, and sales positions particularly those companies in rural/small town areas.

Handling, Processing, & Shipping

- Transportation/logistics: Some companies have vertically integrated and are doing well, but others have challenges or would have a hard time growing without transportation/logistics support.
- Larger firms in both processing and aquaculture also need production and facilities design and management, as well as engineering skills related to pump/water systems.

Opportunities

- The demand for aquaculture products rising, particularly kelp, which is only just getting started in North America
- New Americans represent a significant labor pool. Some companies are succeeding at utilizing foreign-born workers and workers in hard-to-reach populations. Large companies spend a lot of time and resources on this. Industrywide initiatives can help both large and small companies.
- The price of kelp and oysters are strong, supporting growth in industry.
- There are opportunities for high schools, universities, and community colleges to collaborate and share opportunities in sea-based industries.
- There is a cross-section of opportunities and skills among the subsectors – lobstering and aquaculture in particular. Kelp/algae fit with both skills and seasons (different seasons making both possible). Companies are having some success recruiting lobster workers to also work in algae and other aquaculture.
- Mentorships, internships, and apprenticeships when used are very helpful for attracting workers and then retaining them.
- Expand horticulture and agriculture-type training programs to include aquaculture.
- All can benefit from increased connections and access to workforce and education entities.
- Increasing opportunities for healthcare and benefits for part-time and seasonal workers could help with attraction and retention.
- There is collaboration among companies within industry including within workforce.

Growing & Harvesting

- Flexibility/design of work so that it fits people's lifestyles can help retain employees and find the right fit for those who may not want to work year-round.
- Synergy/coexistence between aquaculture (especially kelp) and lobstering/fishing due to seasonality of each.

Handling, Processing, & Shipping

- Automation is growing, which can help reduce the need for manual labor and provide efficiencies/higher wage employment (but much of the work is still quite physical in nature).
- Skills are similar to other food industries and workers come from some of those other food-related industries, such as meat processing.
- It is common to advance/be promoted from within. This provides opportunities for workers to have long-term careers.
- The immigrant population has proven to be well-suited for the industry. Any help supporting this population as well as increasing visas can have a big positive impact.

Other Findings

- Needs vary between communities (Portland has a deeper labor pool than Damariscotta, for example).
- Automation/technology is regularly being adopted and integrated to gain efficiency and reduce the need for more labor.
- Many interviews cite the importance of R&D to industry growth and sustainability, as well as business skills to optimize markets and financial feasibility. These are skills that are needed in the industry – additionally, a commitment to building business models and focusing on value-added will help keep industry competitive including with wages.
- Most employers looking for workers utilize online platforms like Indeed plus word of mouth, and local advertising.

Resources

Each of the following resources were indicated within the interviews as serving as a resource related to the industry and education/workforce development.

- SEAMaine
- Island Institute
- Maine Maritime Academy – particularly for vessel skills and experience
- Washington County Community College – in particular captain's course
- Maine Aquaculture Innovation Center
- Coastal Enterprises Inc –aquaculture in shared waters course (free)
- Southern Maine Community College
- Maine Department of Labor
- Unity College
- Colby College
- University of Maine
- University of New England
- Cape Elizabeth High School – aquaculture program – one example of such program
- Maine Aquaculture Association
- Gulf of Maine Research Institute
- Maine Center of Entrepreneurs

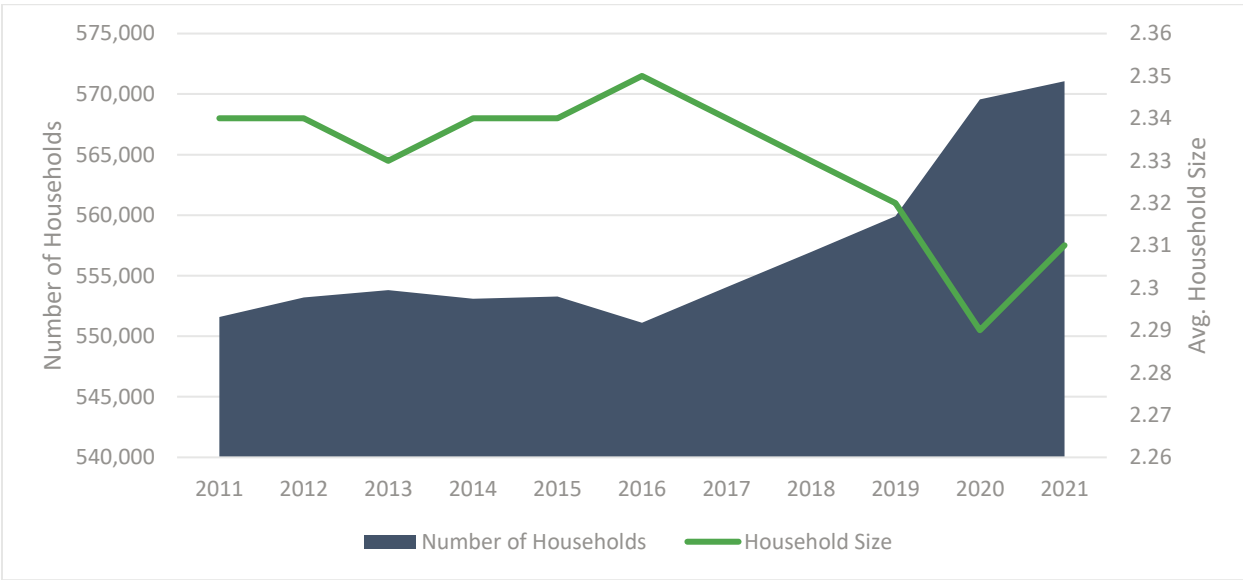
HOUSING ANALYSIS

During the one-on-one employer interviews, workforce housing emerged as a substantial challenge impacting the ability of the MLR to grow and thrive. Workers in Maine, a state with a large tourism economy and saw significant in-migration during the COVID-19 pandemic, are experiencing extreme challenges in accessing housing that is affordable and near their employment. This quantitative analysis will document the economic, demographic, and inventory characteristics of the Maine housing market, using the most recently available data to better understand the challenges facing these workers.

Households

Since 2016, the number of households in Maine has been steadily growing. Conversely, the average household size has been declining. In 2021, there was a slight uptick in average household size. However, it remains to be seen if this uptick becomes a longer-term trend.

Figure 28: Maine Households and Household Size, 2011 - 2021.

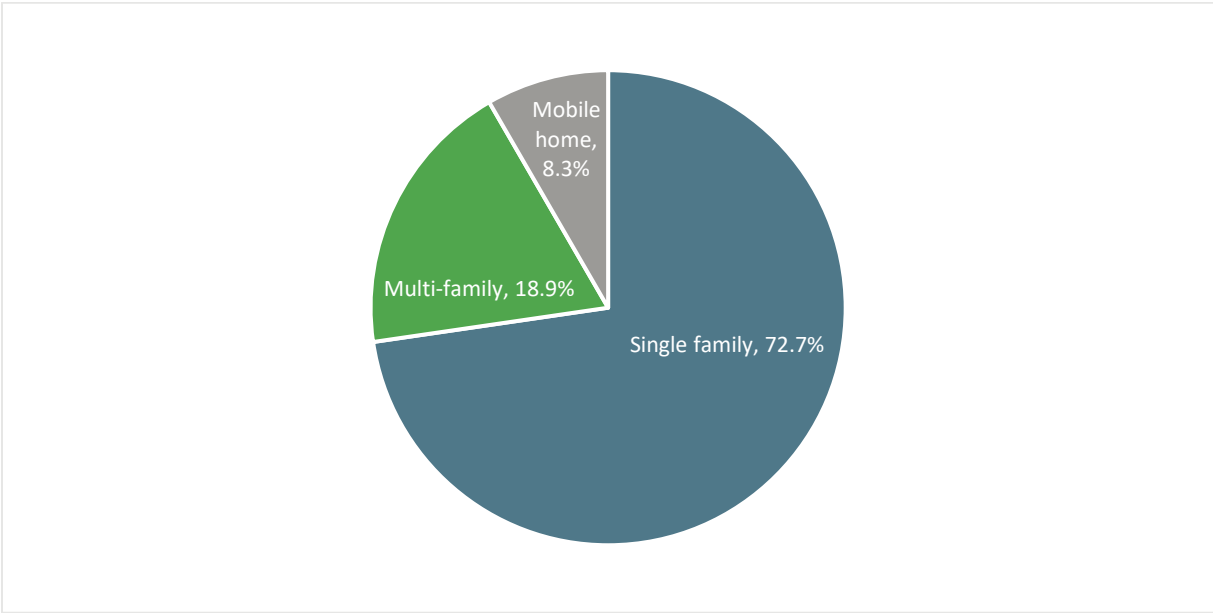


Source: 2011 – 2021 American Community Survey 5-Year Estimates.

Housing Type

Housing in Maine is a combination of single-family units, multi-family units, and mobile homes. The vast majority of homes are single-family (see Figure 15). Somewhat unique to Maine, mobile homes make up 8% of the total housing stock. The preference for single-family homes has grown over time; since 2011, the percentage of single-family homes has increased by about 1%, while the percentage of multi-family and mobile homes have decreased. Compared to the United States as a whole, Maine has more single unit detached structures, small multi-family homes (two to four units), and mobile homes, and fewer large buildings and developments.

Figure 15: Maine Housing Stock by Type

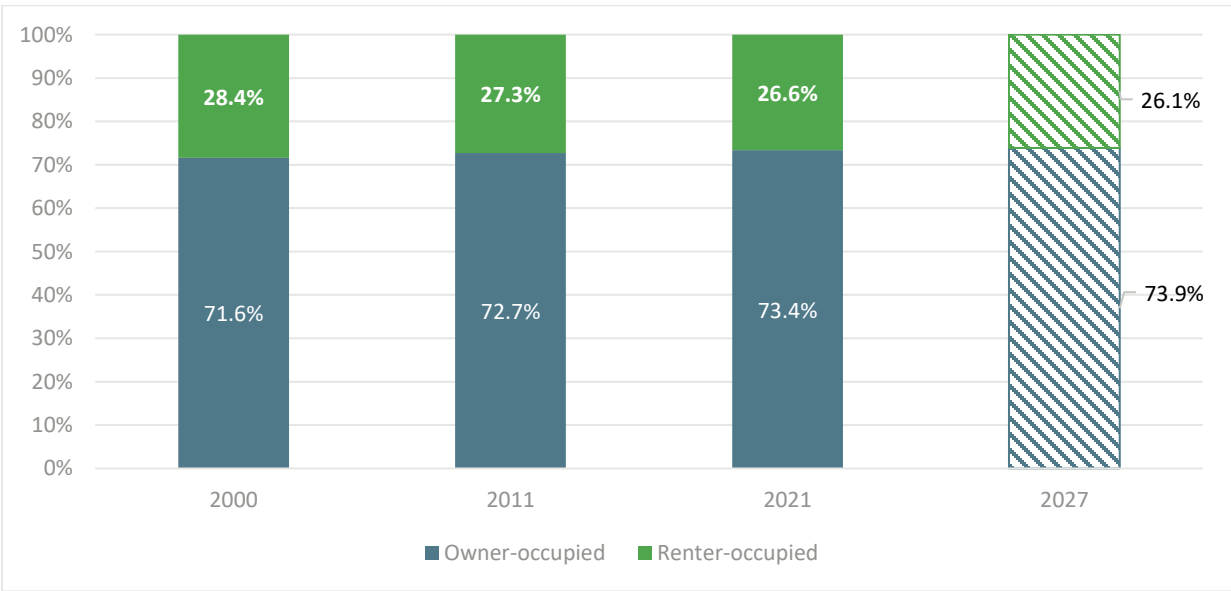


Source: 2021 American Community Survey 5-Year Estimates.

Housing Tenure

The percentage of owner-occupied housing has increased since 2000, while the percentage of renter-occupied units has decreased. Over the next five years, this trend is projected to continue, and the share of owner-occupied homes will grow slightly.

Figure 30: Maine Housing Tenure, 2000 to 2027.



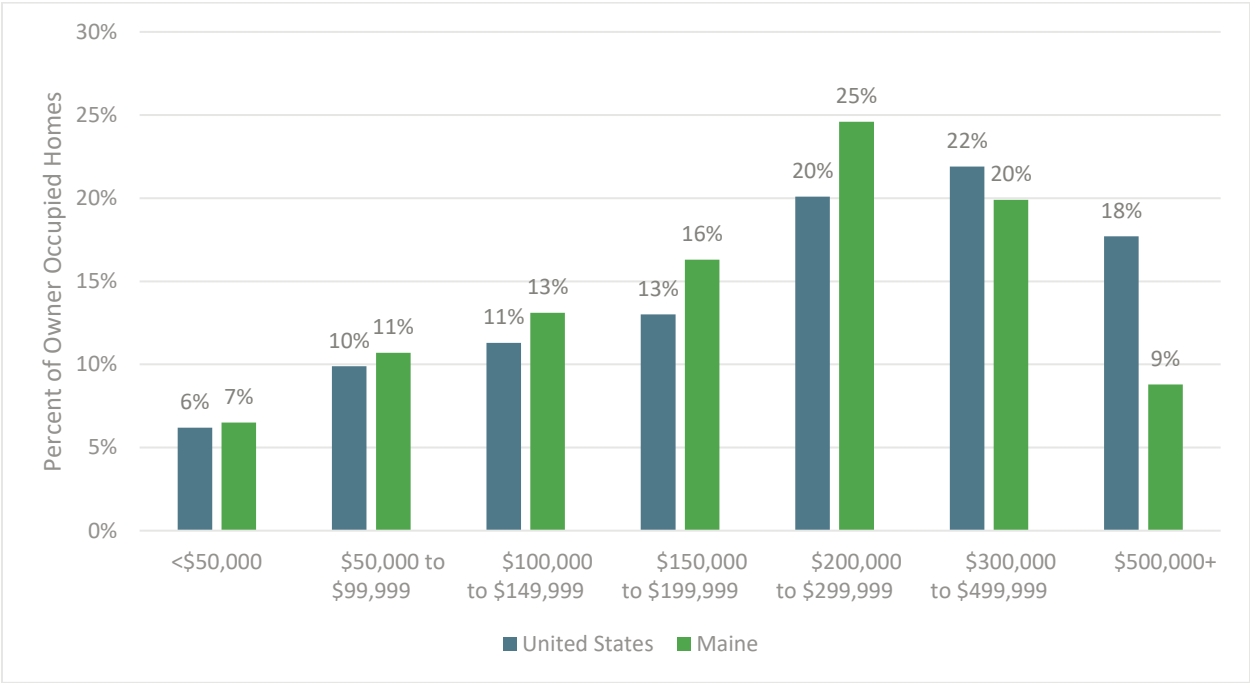
Source: 2011 and 2021 American Community Survey 5-Year Estimates, 2000 Decennial Census. 2027 projections from ESRI Business Analyst.

Owner-Occupied Home Value

The median home value in Maine is \$212,100, slightly lower than the national value of \$244,900. The majority of home values range from \$150,000 to \$499,999. From 2016 to 2021, home values in Maine steadily increased by 2.2% to 4.0% per year. From 2020 to 2021, the median home value increased by 7.1%, almost double the increases that were previously seen.

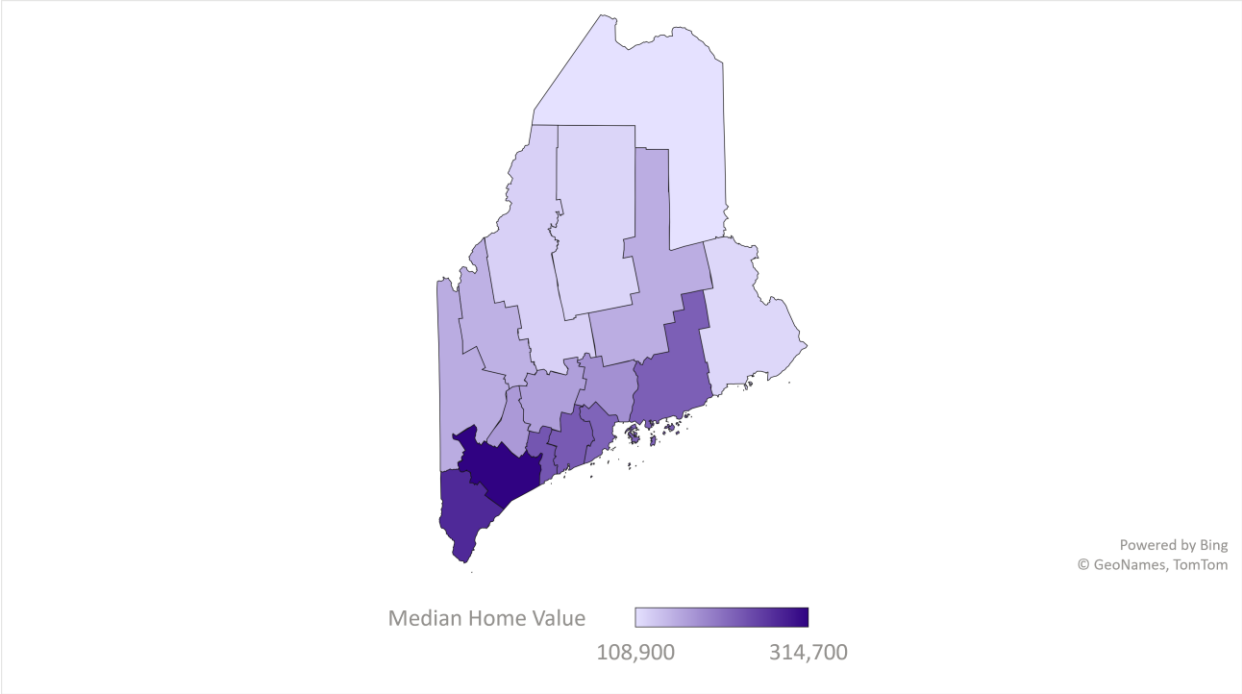
Home values vary across the state; southern coastal counties tend to have the highest median home value, while northern and inland counties tend to have the lowest (see Figure).

Figure 31: Occupied Home Values.



Source: 2021 American Community Survey 5-Year Estimates.

Figure 32: Median Home Value by County, 2021.



Source: 2021 American Community Survey 5-Year Estimates

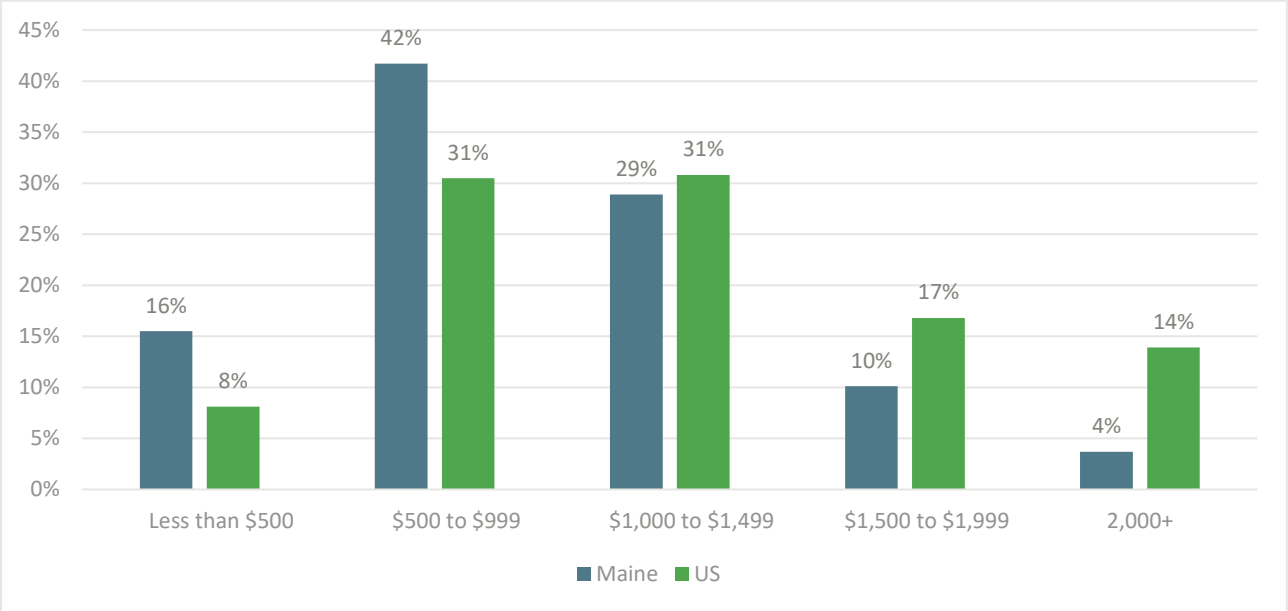
Gross Rent

The median gross rent¹⁴ in Maine is \$927, about 20% less than the national value of \$1,163. The majority of monthly rental rates are less than \$1,500, with only 14% of all rents in Maine being higher than that. Between 2016 and 2020, the median rental price increased by 2.3 to 2.8% per year. From 2020 to 2021, the median gross rent in Maine increased by 6.2%, almost three times the increase of the previous year.

As with home values, the median gross rent varies by county. Rents are lowest in Washington and Aroostook counties and highest in Cumberland county (see Figure).

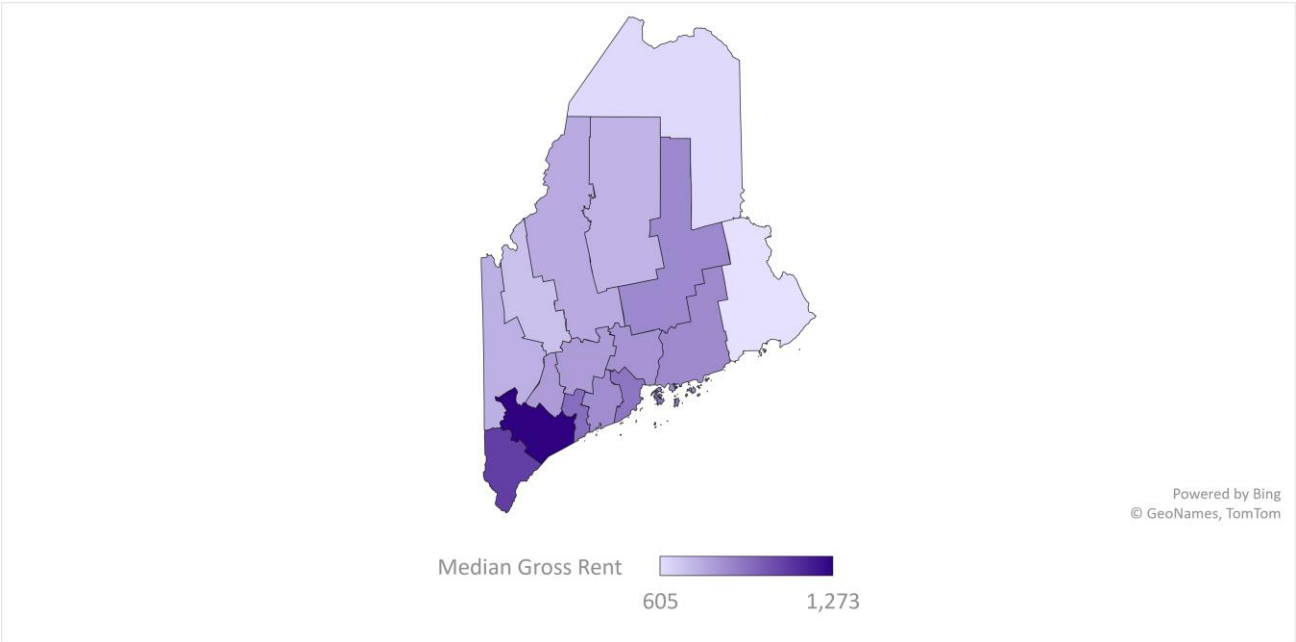
¹⁴ Gross rent is the contract rent (the agreed upon monthly rent) plus the estimate average cost of utilities and fuels.

Figure 33: Gross Rent



Source: 2021 American Community Survey 5-Year Estimates

Figure 34: Median Gross Rent by County



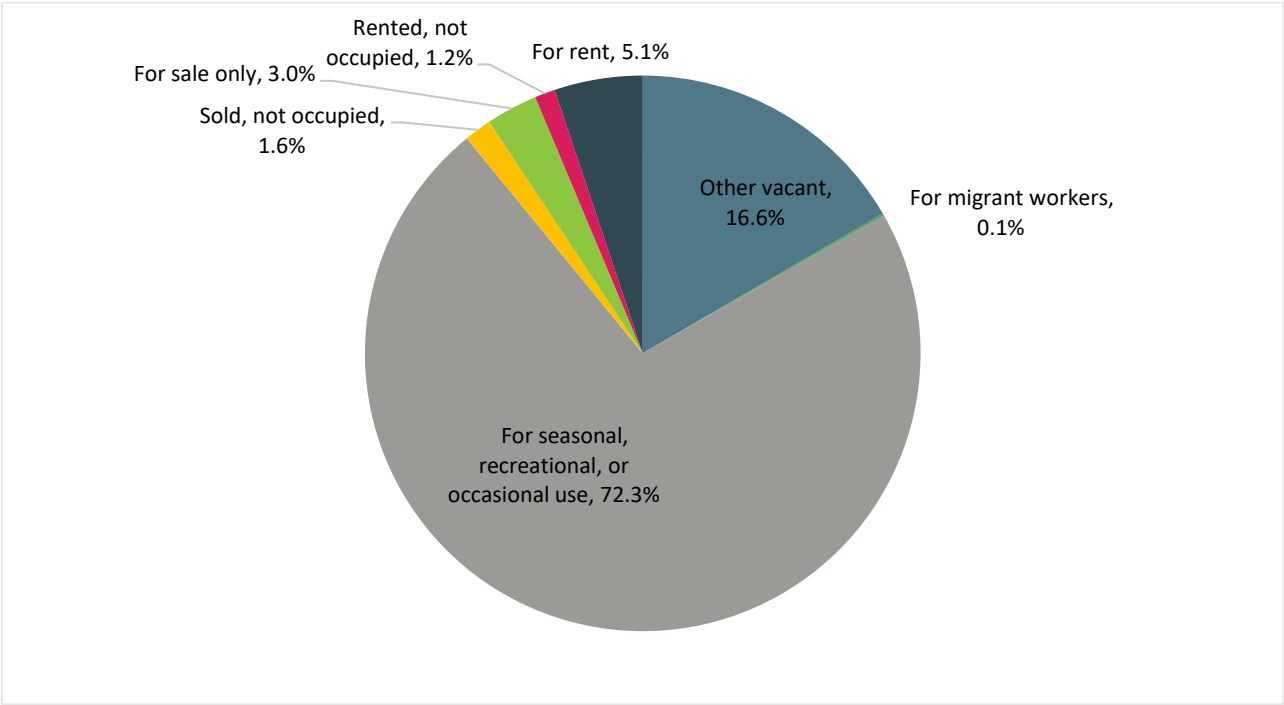
Source: 2021 American Community Survey 5-Year Estimates

Vacancy Rates

In 2021, Maine had 166,718 vacant housing units that were vacant year-round, or 23% of the total housing units. The vast majority of these vacant units are being used seasonally, recreationally, or occasionally. As a state with a strong camp culture and large tourism

industry, strategies for increasing occupancy of these seasonal homes could reduce the housing squeeze.

Figure 35: Reason for vacancy

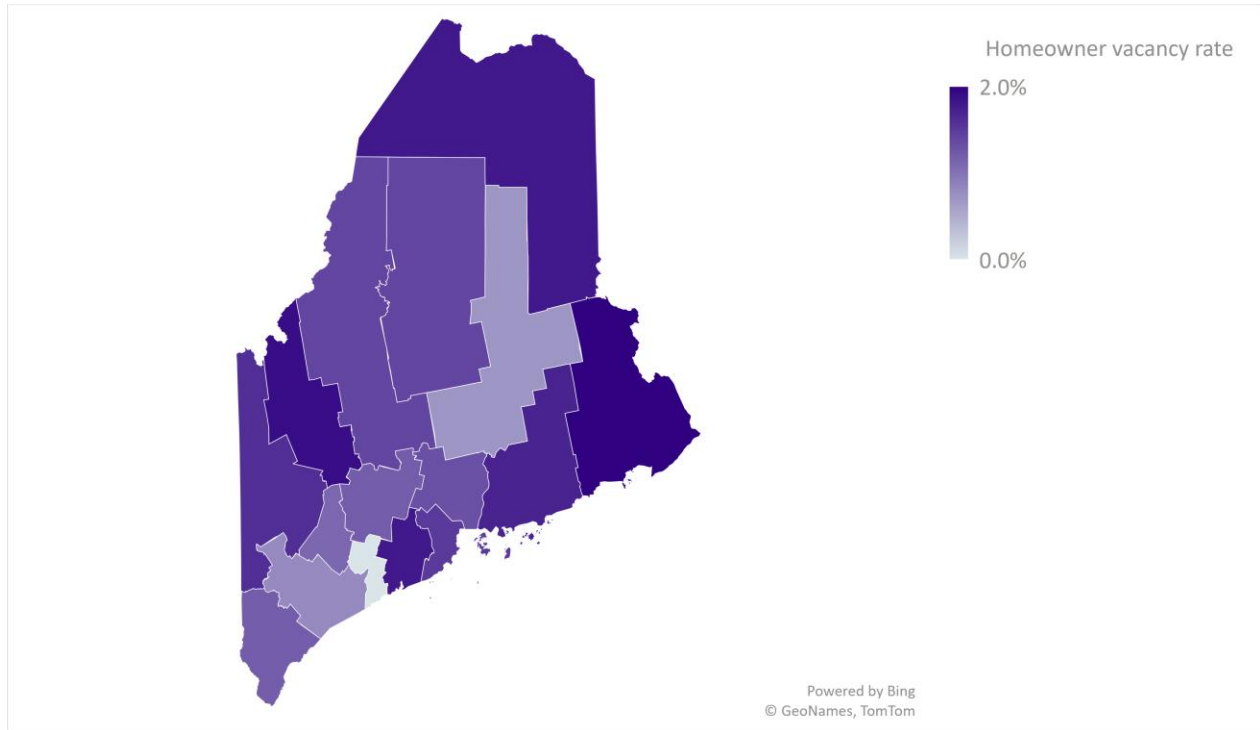


Source: 2021 American Community Survey 5-Year Estimates

Homeowner Vacancy Rate

In Maine, the homeowner vacancy rate¹⁵ is 1.2%, which matches the homeowner vacancy rate in the United States. The homeowner vacancy rate has decreased by 0.8 percentage points since 2016. This varies by county; Washington and Aroostook counties have the highest homeowner vacancy rates (see Figure).

Figure 36: Homeowner vacancy rate by county



Source: 2021 American Community Survey 5-Year Estimates

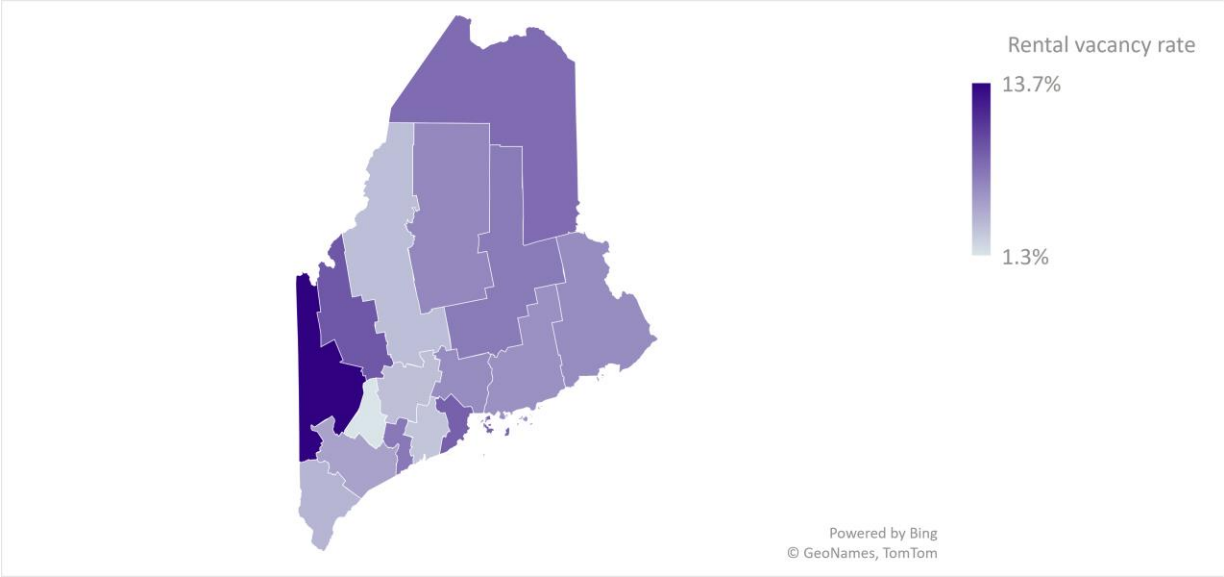
Rental Vacancy Rate

The rental vacancy rate¹⁶ in Maine has decreased by 1.1 percentage points since 2016, and currently sits at 5.3%. This is slightly lower than the nationwide rental vacancy rate of 5.7%. As with the homeowner vacancy rate, the rental vacancy rate varies by county, with Oxford County having the highest rental vacancy rate.

¹⁵ The homeowner vacancy rate is calculated as the number of vacant year-round homeowner inventory for sale divided by the sum of the owner-occupied units plus the vacant year-round units sold but awaiting occupancy plus the vacant year-round units for sale. This does not include units that are held off the market and units that are vacant seasonally.

¹⁶ The rental vacancy rate is calculated as the number of vacant year-round units for rent divided by the sum of renter occupied units, vacant year-round units rented but awaiting occupancy, and vacant year-round units for rent. This excludes units that are held off the market and rental units that are vacant seasonally.

Figure 37: Rental vacancy rate by county.

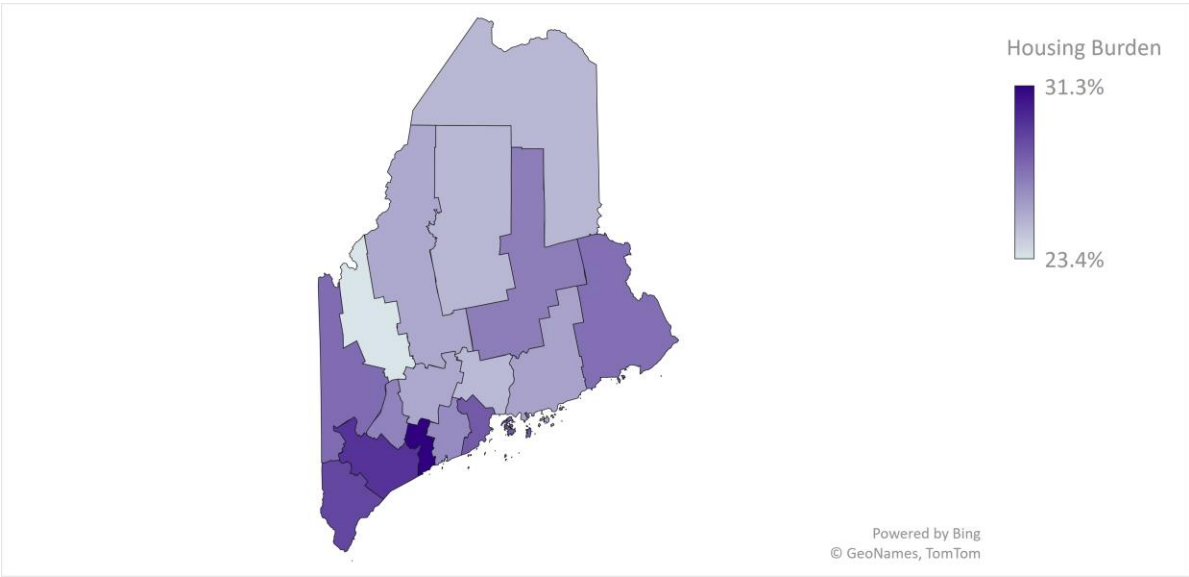


Source: 2021 American Community Survey 5-Year Estimates

Cost Burden

Households are said to be cost-burdened if they spend more than 30% of their monthly income on rent and utilities. Overall, 28% of Maine households are cost burdened. As seen in Figure, this varies by county. However, in all counties in Maine, at least 25% of households are cost burdened.

Figure 38: Cost burden by county.

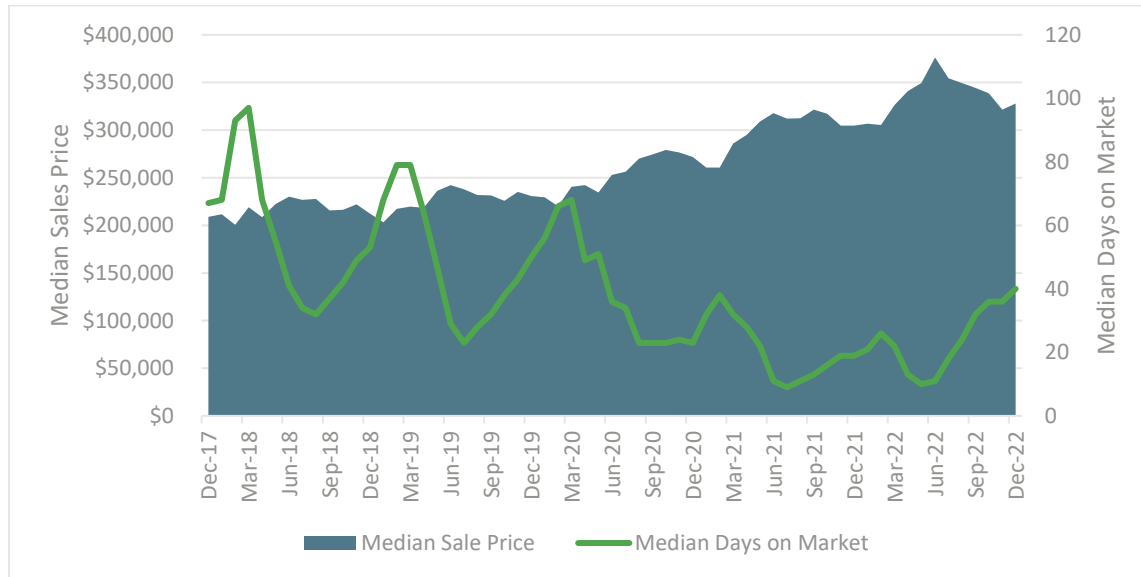


Source: 2021 American Community Survey 5-Year Estimates

Sales Prices and Time on Market

Since 2017, the median home sales price in Maine has been steadily rising. Prices peaked in May 2022 and have since decreased. However, prices still remain above pre-pandemic levels. Simultaneously, the number of days on the market has been decreasing. This also reached its lowest level in May 2022. Since then, the number of days on the market have increased, a trend that is likely to continue as long as interest rates continue to rise.

Figure 39: Median sales price and median days on market for homes sold in Maine, December 2017 to December 2022.



Source: Redfin Market Insights.

PROMISING PRACTICE RESEARCH & RECOMMENDATIONS

Talent Pipeline Development

In an increasingly tight, and competitive, labor market, employers and employer organizations are becoming increasingly creative, and forward thinking, when it comes to developing their talent pipelines. In this section, we highlight a selection of promising practices from around the country that are being leveraged to meet employment needs of not only today, but tomorrow as well. For industries that, perhaps, are not so well known, or, perhaps, are battling misperceptions about the nature of the work or the pay and benefits available, a major part of these initiatives is correcting these public misperceptions. Manufacturers have long battled these perceptions, as they transitioned to a more technical, skilled workforce over the latter part of the 20th Century, so it should come as no surprise that our first Promising Practice comes from a private/non-profit partnership between employers and the Manufacturing Institute (<https://www.themanufacturinginstitute.org/>).

Future Creators Programming

As part of a broader “Careers on Track” program developed in concert with the Manufacturing Institute, Union Pacific Railroads recently launched a 3-year, \$3 million dollar initiative to bring career paths in transportation, distribution, and logistics (TDL) to middle school students across the country. The “Future Creators” initiative has made available, at no cost, digitally delivered STEM curriculum and content to over 24,000 middle schools. The curriculum is supplemented with real world examples and highlighting how these skills apply to a career in TDL. To date, the Manufacturing Institute reported that over 80% of all participants have an increased awareness of/interest in careers like those available at Union Pacific¹⁷.

The classroom component was designed, specifically, to reduce gender gaps and dispel myths about both the type and nature of jobs in the industry. A 3-D, mobile simulator was also included as part of the program, traveling the country to promote the industry’s careers in a fun, interactive way to targeted communities. Again, the tour stops are designed to target women, young people, and traditionally underrepresented communities to create awareness and improve perceptions¹⁸.

Be Pro, Be Proud South Carolina

In September of 2020, in partnership with the Governor’s Office (and the South Carolina Department of Employment and Workforce), the Associated Industries of South Carolina (<https://www.sctrucking.org/scta-foundation/>) launched the Be Pro, Be Proud initiative. Utilizing initial and support funds from employers and the state itself, the initiative focuses on a custom-built, double-expandable, 53 ft. trailer that serves as a mobile workshop, with simulators for truck driving, forklift operation, welding, and carpentry skills. The trailer is transported around the state with a tractor provided by Carolina International Trucks, and has, to date, visited 308 locations across the state, focusing on high schools and technical schools. To support the on-site events, the initiative has its own website as well, with links to career pathways, training programs, job openings, and employers (<https://www.beprobeproudsc.org/>).

Other states (Arkansas, Georgia, New Mexico, North Carolina, and Tennessee) have launched similar initiatives, all designed to highlight earnings potential and attract the next generation of pros to their industries.

Talent Bound, Marion County, Indiana

To better respond to the mismatch between skills needed in industry and the emerging workforce, the state of Indiana requires work-based learning as a graduation requirement for high school students. Talent Bound serves as the connection between this requirement and the students of Marion County, providing a three-phased approach to career exploration for students. First, classroom curriculum and mentoring connections are established to develop a baseline understanding of industry sectors. Next, through “Talent Tours” and “Talent Shadow” opportunities, students are exposed to a wide variety of industries and hands-on activities.

¹⁷ <https://www.themanufacturinginstitute.org/press-releases/union-pacific-railroad-and-the-manufacturing-institute-launch-digital-stem-awareness-program-for-middle-school-students/>

¹⁸ <https://www.nam.org/how-manufacturers-are-investing-in-their-future-workforce-17633/?stream=workforce>

Finally, students are able to further explore and develop their skills through paid work experiences, through “Talent Hire”, “Talent Intern”, and “Talent Apprenticeship” programming, designed to meet the post-graduation goals of each student.

Employers can join the program through a relatively straight-forward process, streamlined to meet their busy schedules and tailored to their broader recruitment needs/goals. The program continues to expand, with more employers coming online quickly, some alleviating immediate staffing pain points with the paid student workers. All employers get the chance to promote their industry and recruit the emerging generation of workers.

Educator in the Workplace

A program gaining popularity across the country, the Educator in the Workplace curriculum starts by reaching the people, perhaps, most responsible for exposing the next generation to promising career opportunities: teachers and guidance counselors. Through a straightforward registration process and at no charge to teachers or school districts, the curriculum sponsored by the Scranton, PA Chamber of Commerce (<https://www.scrantonchamber.com/educators-in-the-workplace/>) first offers classroom overviews of industry sectors and requirements of employees, both education, training, and soft skills. Next, educators are afforded an opportunity to meet one-on-one with industry leaders, tour local facilities and, ultimately, spend some time actually completing tasks associated with in-demand occupations. Educators routinely report being exposed to opportunities they were not previously aware of, and, in turn, return to their classrooms and offices able to counsel and instruct prospective next generation employees about the steps necessary to enter these careers.

Expanded Recruitment & Retention Strategies

Erie County Re-Entry and Support Alliance (ECRSA)

Funded by the Greater Erie Community Action Committee (GECAC), the United Way, and Pennsylvania Department of Education, the Alliance provides case management and wrap around services for justice involved individuals seeking to re-enter the workforce. Because many are faced with myriad challenges upon release- including housing, transportation and, in some cases, childcare challenges, the program was established to help address these problems so participants can focus on getting back to work. Employers have reported significant success working with the Alliance and with supports in place to help their transition back to the community, the risk affiliated for employers is alleviated. The program has been widely recognized as a best practice and continues to attract additional funding and interest from community partners and employers themselves.

MaineWorks is helping to provide jobs for those facing barriers to workforce reentry, including those with felony convictions. They partner jobseekers with jobs in many fields, including construction, carpentry, masonry, roadwork, and landscaping, as well as providing a comprehensive social needs evaluation through the Maine Recovery Fund to connect workers with necessary supportive services. For the MLR, partnering with organizations such as this, either by helping to fund the program or hiring enrollees, would serve as an important first step in expanding the MLR reach into the underutilized population of ex-offenders in the state.

LGBTQ+ Community

Research by the Society for Human Resource Management (SHRM) illustrates that members of the LGBTQ+ community, despite recent advances, continue to face daunting barriers to workforce entry. The transgender community, specifically, is cited as a segment of the population with an exceedingly low rate of labor force participation, lower than individuals with disabilities by some estimates. These talented individuals are often left on the sidelines, despite their willingness and ability to help assuage the challenges in hiring faced by industries across the board. Some large corporate employers, however, have created and implemented plans to increase the diversity of the workforce, with a specific emphasis on the LGBTQ+ community. Bank of America, for example, was one of the first employers in the country to develop a toolkit for both the hiring and the retention of members of the community. In fact, the organization was one of the first in the country to develop a framework specifically dedicated to the hiring and retention of transgender employees in 2014. Since that time, Bank of America has conducted hundreds of presentations for and been engaged by multiple Fortune 500 companies to both teach diversity in the workplace and develop inclusive policies, practices, and procedures¹⁹.

SHRM highlights the need for intentional engagement and planning, and the importance of including LGBTQ+ individuals as part of the process of updating internal hiring and retention guidelines. The Society also identifies *Out & Equal* as THE premier organization in the United States advocating for and assisting in the development of true workplace equality. The organization has a wide variety of toolkits, self-assessments, and best practices/articles available directly to employers on its website, <https://outandequal.org/toolkits-guides/>

MLR economy employers who want to learn how to be better allies and better support LGBTQ+ job seekers and employees can hire local LGBTQ+ organizations. Maine TransNet provides transgender cultural competency training for community organizations, health care professionals, social service providers, educators, clergy, and professional environments. EqualityMaine offers cultural competency trainings and professional development on a variety of issues concerning LGBTQ+ people, including Supporting Transgender People in the Workplace and Make your Agency more LGBTQ+ Inclusive.

Native American Population

The Office of Federal Contract Compliance (OFCC), a division of the US Department of Labor (DOL), in concert with the Indian and Native American Employment Rights Program (INAERP), published a “best practices” guide for hiring, and retaining, Native Americans. While the guide and some program specifics (e.g. Indian Preference in hiring for work conducted at or near a reservation) are applicable only to businesses contracting with the federal government, the general advice and resource links are universally valid. Highlights include:

¹⁹ <https://www.shrm.org/hr-today/news/all-things-work/Pages/a-sense-of-belonging.aspx>

1. Working directly with Tribal Employment Rights Organizations (TEROs)²⁰ and vocational and training programs designed explicitly to assist Native Americans. Engaging tribal stakeholders directly for recruitment will help expedite the process and establish the beginning of a longer-term relationship. In Maine, information on Tribal Leadership can be found here: <https://www.bia.gov/bia/ois/tribal-leaders-directory/>; and the Wabanaki Vocational Rehabilitation program here: <https://maliseets.net/vocational-rehabilitation/>
2. Reconsidering standardized employment tests when screening applicants. Native Americans are often sensitive to these types of tests for historically denying their elders access to education and employment. When possible, it is recommended that other methods be used to screen candidates for necessary job qualifications or evaluate employees for advancement opportunities.
3. Consider access limitations for Native American communities when recruiting, especially the absence of high-speed internet on many reservations. On-site recruiting events can be more effective, but will require establishing trust and partnerships with tribal leaders and agencies already working within the community.
4. Focusing on building long-term relationships within the community, trust mentioned explicitly as a significant barrier to recruitment and retention of a Native American workforce. This means building an inclusive and welcoming environment at the workplace and reinvesting in the community, beyond the paychecks of employees.

The full list of best practices can be accessed at:

<https://www.dol.gov/agencies/ofccp/compliance-assistance/outreach/indians-native-americans/best-practices>

Collaboration and Coordination

OH-PENN Interstate Manufacturing Alliance

As the first interstate industry partnership in the nation, the OH-PENN initiative is comprised of employers from the Ohio counties of Columbiana, Mahoning, and Trumbull and the Pennsylvania counties of Lawrence and Mercer. Founded with the overriding premise that labor pools do not respect county or state lines when pursuing new opportunities, the alliance has been a vehicle to greater collaboration across traditional workforce development areas. Over the course of its relatively brief existence, the Alliance has developed a wide array of Department of Labor recognized apprenticeship programs in manufacturing and affiliated industries. As both an industry organization and training consortium, the Alliance has opened doors for both employers and employees looking to leverage funds from across the region for training support and seeking camaraderie and best practices from around the region. The work of the initiative is supported with a public-facing website that provides detailed occupation, training, and apprenticeship information for prospective job seekers (<https://industryneedsyou.com/>).

²⁰ A full list of Tribal Employment Rights Organizations (TEROs), as well as news, contact information, and conference highlights can be found at: <https://cter-tero.org/>

RECOMMENDATIONS

Diverse Talent Attraction and Retention

Based purely on the data presented at the beginning of this report, two demographic challenges face Maine: its low labor force participation rate and the decline in the number of younger citizens in the state. While SEAMaine can, of course, engage in a broad marketing campaign in concert with state or local leaders designed to highlight the appeal of the state to non-residents, changing these trends is a large problem well beyond the control of this organization. However, the industry CAN dig deeper into the pool of potential talent in the state by focusing on traditionally marginalized populations, most notably individuals who are justice-involved and individuals with disabilities.

Justice-Involved Individuals

The Society of Human Resources Management (SHRM) has conducted extensive research on individuals with criminal records in the workplace. Based on responses from over 40,000 employers, over 80% of respondents indicated that employees with criminal records perform as well or better than other employees²¹. Additionally, employers like Envoy and Saint Gobain have publicly endorsed studies that show that second chance employees are retained longer, all else equal, than other, non-criminal record staff²². This squares with analysis from the US Chamber of Commerce that highlights second chance employees as vital to reducing turnover. Additionally, they estimate that excluding individuals with criminal records from the workforce leads to a loss of between \$78 and \$87 Billion in unrealized GDP annually for US industries²³.

To support employers looking to bolster their current hiring practices when it comes to justice involved individuals, SHRM also produced a toolkit that helps guide the way. Available at <https://www.gettingtalentbacktowork.org/>, the kit includes testimonials, best practices, and advice on building career pathways for ex-offenders. While all industries can help reduce their labor shortages by looking at the ex-offender population, for the MLR economy, where loyalty and retention were highlighted as challenges by several of the employers the team spoke to, second chance employees have the potential to fill these high-turnover positions and remain with the company much longer than other employees. More than that, with Work Opportunity Tax Credits and FREE bonding from the federal government available via local workforce one stop centers for new hires with criminal records, there are serious financial incentives to support this initiative.

Community Action organizations and non-profits across Maine are working with employers across the state to secure opportunities for second chance individuals. The local workforce development boards, discussed in fuller detail below, are often the starting point for identifying and connecting with these programs. Hiring individuals with criminal records, who

²¹ <https://www.gettingtalentbacktowork.org/>

²² <https://www.themanufacturinginstitute.org/how-manufacturers-should-pursue-second-chance-hiring-16944/>

²³ <https://www.uschamber.com/employment-law/how-employers-can-build-career-pathways-ex-offenders>

are, disproportionately, minorities or persons of color, can also jump-start a broader diversity drive within the workplace.

Individuals with Disabilities

As indicated through both the surveys and conversations with employers, diversity, not only in gender, ethnicity, and race, but also in the presence of individuals with disabilities in a challenge in the industry. In Maine, just 34% of the working-age population with a disability are employed; this is less than half of the rate for those without a disability.²⁴ Fortunately, a robust program of support for employers and job seekers with disabilities already exists, as offered by the Maine Division of Vocational Rehabilitation (<https://www.maine.gov/rehab/dvr/index.shtml>). Active engagement with representatives from the Division, and a willingness to work together with the Division and new employees to provide the specific accommodations necessary to not only attract but retain these potential employees is all that is required to tap into this underutilized labor pool.

LGBTQ+

Throughout the best practices research on building a welcoming and inclusive workplace, the emphasis remained on engagement with community members when constructing policies, procedures, and practices aimed at increasing LGBTQ+ recruitment and retention. Remaining abreast of all current laws, rules, and regulations and ensuring full adherence is an important, basic step. But beyond meeting these basic requirements, an important first step for employers is a full open and assessment of the culture and benefits available for this community. The Human Rights Campaign has tracked Corporate Equality with regard to LGBTQ+ workplace for 20 years and produces annual lists of top-employers. In brief, the best employers:

1. Ensure nondiscrimination policies are in place and enforced across business entities
2. Provide equitable benefits for LGBTQ+ workers and their families
3. Foster a supporting an inclusive culture
4. Practice corporate social responsibility and
5. Actively drive equality in LGBTQ+ family formation

As part of their annual report (available at https://reports.hrc.org/corporate-equality-index-2022?_ga=2.31858494.1618424107.1678889900-1309780240.1678889900#spotlight-equality-public-square), HRC provides a questionnaire and scoring mechanism used in its evaluations. We have included this tool in Appendix IV for employers interested in completing a self-assessment. Hiring a Diversity Equity and Inclusion consultant, or contracting with a firm specializing in corporate assessment and training, to administer the survey and assist with planning and culture change could be a viable strategy for employers.

²⁴ “Maine Workers with Disabilities.” *Center for Workforce Research and Information*. <https://www.maine.gov/labor/cwri/disabilities/index.html>

Coordination of Workforce Strategies Among Partners

In terms of expanded collaboration with partners, it is recommended that SEAMaine actively engage with the local workforce development community. In addition to state workforce development board, comprised of gubernatorial appointees representing employers, labor unions and employee groups, education providers, and partner program representatives (such as vocational rehabilitation department officials), Maine also has 3 separate local workforce development boards. The Northeastern Area covers the counties of Aroostook, Hancock, Penobscot, Piscataquis, and Washington; Central Western Area covers Androscoggin, Franklin, Kennebec, Oxford and Somerset counties and; the Coastal Counties Board serves the counties of Cumberland, Knox, Lincoln, Sagadahoc, Waldo and York.

Both the state and local workforce boards work closely with employers and training providers to designate occupations as high-priority/in-demand. While the specific criteria can vary slightly from region to region, in general terms, for an occupation to be classified as in-demand it must be growing faster than the state average for all occupations AND provide a family-sustaining income for potential employees. Once an occupation is designated as in-demand in a local area, or statewide, individuals seeking to transition into one of these jobs are eligible for training dollars and supportive service (for example, childcare or transportation) assistance while completing the designated training program. Eligibility criteria for individual enrollees are also determined by local boards, in concert with state and federal guidance, with training dollars typically restricted to displaced workers (losing their prior jobs through no fault of their own) or individuals with barriers to employment (such as basic skills deficiency, reliance on public assistance, unmet transportation or childcare needs, for example).

Broader, less restrictive (in terms of individual eligibility) training programs also exists for employees who were displaced from their current jobs due to adverse trade conditions. This training- authorized by the Trade Adjustment Act- is available on a longer-term basis for displaced workers when their job loss is certified by the Department of Labor as a result of the aforementioned adverse trade conditions.

Additionally, local workforce boards also oversee, and in some cases, manage Industry Partnerships in their region. In addition to gathering employers together to discuss and address a wide range of workforce related challenges, often these Industry Partnerships and their members can access Incumbent Worker Training dollars, made available on (typically) a reimbursement basis to upskill and retain current employees. While SEAMaine has a vibrant, active organization that, in many ways, encompasses and supersedes the work of traditional industry partnerships, tapping into pre-existing networks and actively participating in local workforce board meetings could expand the organization's footprint and position the group for access to incumbent worker training dollars. Additionally, attending these public board and committee meetings would afford the group the opportunity to highlight the in-demand occupations for the industry, and start the process of adding them to the local area's list of occupations eligible for training dollar support.

Developing the Talent Pipeline

Clearly, SEAMaine has already taken some of the most important steps in developing the talent pipeline: identifying in-demand occupations and building career pathways. The next step in this

process is promotion and distribution of the pathways and raising awareness of the industry. Through the course of employer interviews, lack of awareness of opportunities by school officials, teachers and guidance counselors, was pointed out as a challenge for the industry. In the best practices section above we highlight proven examples of how best to promote and share these career pathways, especially with the next generation of workers.

Working much more closely with local school districts and community colleges to both refine and promote the opportunities that exist in the MLR economy will be vital. Fortunately, plugging in to the local workforce development system will expedite these type of partnerships, as educators are required representatives on local workforce development boards. Once connections have been made, the possibilities are limitless for employers when it comes to promoting careers in the MLR economy. Interactive exhibits, experiential learning opportunities, educator in the workplace programming, and active participation in job fairs/career awareness events are all potential opportunities to increase awareness of and interest in MLR occupations. Targeted recruitment campaigns for part-time employees, when the job conditions allow, drawn from the ranks of high school seniors or recent graduates are a possible solution to alleviating some immediate labor force crunches, with the potential of attracting full-time recruits upon graduation.

Automation and its Potential

Raised by employers as part of engagement, the future potential of automation to alleviate some pain points in attracting and retaining the workforce the industry needs is real. Though not an “immediate” solution, as technology progresses, the potential for the industry to capitalize on non-human labor is part of a future solution to workforce challenges. While industry experts are better positioned to speak about the specific modalities and developments, as they pertain to specific MLR opportunities, there has been a considerable push toward adaptable, programmable, easy-to-use “cobots” in the workplace. In a partnership with Vincennes University (Indiana)²⁵, Telamon Corporation is providing training and development support for employers looking to automate routine processes in the workplace with teachable cobots, that assist workers in their day-to-day tasks. Telamon is actively expanding the use of these cobots beyond traditional manufacturing and is eagerly seeking partners in new sectors to develop cobot solutions that meet their needs (<https://telamon.com/robotics/>).

Supporting the Talent Pipeline

Workforce housing and transportation were raised by employers as substantial challenges during the one-on-one interviews. Many of the jobs require living near Maine’s coast, which tends to be more expensive. Maine’s small coastal towns, while picturesque, often lack affordable housing units, both for homeownership and for rental. In southern Maine, housing tends to be more plentiful, but cost remains a challenge. These issues are compounded by transportation challenges.

In many of Maine’s rural communities, there is no public transportation, or limited public transportation. Further, 6.7% of Maine households have no vehicles and are reliant on active

²⁵ <https://www.insideindianabusiness.com/articles/vincennes-creating-cobot-hub-with-dollar8m-grant>

transportation, taxis/rideshares, and rides from others. With the expense of housing along the coastline, many workers are forced to live far from their employer and commute long distances. For those without a license or a reliable vehicle, this is a barrier to employment within the MLR economy.

Housing

The workforce housing crisis is multi-faceted and has no easy solution. MaineHousing's Rural Affordable Rental Housing Program will provide funding to build affordable rental housing units. While this is not a short-term solution (housing needs to be built), this should help ease some of the strain on the housing market. Maine has also passed the Maine Affordable Housing Tax Credit program, which provides a refundable tax credit to those who invest in affordable housing. This program should incentivize the development of affordable housing, providing more options for those in the MLR economy.

Community-led initiatives could be employed to ease the housing strain. In Kennebunkport, the Kennebunkport Heritage Housing Trust was established in 2018 with a mission of providing permanent, affordable housing for year-round residents. Land for the Heritage Woods neighborhood was donated by the town in 2019. Construction began in April 2021 and was completed by September 2022. At the time of completion, the six homes (single-family and attached duplexes) that were made up the development were sold. To keep the purchase prices low, the Trust used grants from the Maine State Housing Authority and the Federal Home Loan Bank. Buyers were able to access low-down payment loans from the Maine State Housing Authority. Though a small development, this type of community-led initiative is one piece towards solving Maine's workforce housing puzzle.

Transportation

Addressing transportation challenges will require new and innovative thinking. The Maine Department of Transportation is currently operating a Workforce Transportation Pilot Program grant. This program is focused on connecting workers in rural areas with employment opportunities, although those in urban environments can apply. An employer (or group of employers) could take advantage of this program to address their specific transportation needs. While this process may be labor-intensive, it would result in a transportation solution tailor-made to the needs of the employers. Further, there may be an opportunity to lead a collaboration between employers, non-profits, workforce boards, and others, to maximize the impact. More information on this program is available at <https://www.maine.gov/mdot/grants/mjrp/workforce/>.

CONCLUSION

Maine's MLR economy has experienced growth over the past ten years. The industry is primed for further growth but is being constrained by Maine's limited labor pool. Without intervention, Maine's labor force is likely to continue to shrink, due to its aging population. However, by focusing on talent pipeline development and support, expanded recruitment and retention efforts, and collaboration & coordination, the MLR can increase employee

recruitment, attraction, and retention. Through these efforts, the MLR economy, an important heritage industry, can flourish and support many more generations of Mainers.

APPENDIX I: ADDITIONAL TABLES, OCCUPATION ANALYSIS, CORE AND PERIPHERAL INDUSTRIES IN THE MAINE LIVING RESOURCE CLUSTER

Table 10: Specialized Freight, Sales to Maine Industry Sectors, 2022

Key Sector Customer	In-Region Sales, 2022	Percent of All Sales
Construction	\$14,677,843	26.9%
Retail Trade	\$7,925,642	14.5%
Agriculture, Forestry, Fishing and Hunting	\$6,426,764	11.8%
Transportation and Warehousing	\$4,302,344	7.9%
Government	\$3,734,998	6.8%
Health Care and Social Assistance	\$3,270,891	6.0%
Wholesale Trade	\$3,065,627	5.6%
Accommodation and Food Services	\$2,141,328	3.9%
Professional, Scientific, and Technical Services	\$1,827,779	3.3%
Utilities	\$1,768,535	3.2%
Administrative and Support and Waste Management and Remediation Services	\$1,287,369	2.4%
Information	\$872,776	1.6%
Other Services (except Public Administration)	\$848,115	1.6%
Real Estate and Rental and Leasing	\$766,493	1.4%
Arts, Entertainment, and Recreation	\$516,845	0.9%
Management of Companies and Enterprises	\$465,059	0.9%
Educational Services	\$303,938	0.6%
Finance and Insurance	\$228,600	0.4%
Mining, Quarrying, and Oil and Gas Extraction	\$228,187	0.4%
Total	\$54,659,133	100.00%
Share Attributable to MLR	\$15,936,063	29.2%

Tables 11 through Industry/Occupation Matrices Utilized, with Employment (including Self Employment) Calculations and Projections Included

CENTRAL Industry Sectors in the Marine Living Resources Economy

Table 11: Aquaculture

	Aquaculture (11251)				
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
11-9010	Farmers, Ranchers, and Other Agricultural Managers	50.8%	398	6%	422
45-2090	Miscellaneous Agricultural Workers	35.6%	278	5%	293
45-1010	First-Line Supervisors of Farming, Fishing, and Forestry Workers	1.4%	11	6%	11
53-3030	Driver/Sales Workers and Truck Drivers	1.3%	10	7%	11
39-2020	Animal Caretakers	1.2%	10	12%	11
53-7060	Laborers and Material Movers	1.0%	7	3%	8
39-2010	Animal Trainers	0.9%	7	2%	7
37-2010	Building Cleaning Workers	0.7%	5	7%	6
43-3030	Bookkeeping, Accounting, and Auditing Clerks	0.6%	5	(4%)	5
11-9190	Miscellaneous Managers	0.6%	5	10%	5
43-6010	Secretaries and Administrative Assistants	0.5%	4	(6%)	4
49-9070	Maintenance and Repair Workers, General	0.5%	4	8%	4

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41-9090	Miscellaneous Sales and Related Workers	0.4%	3	18%	4
19-4010	Agricultural and Food Science Technicians	0.3%	2	11%	3
51-9190	Miscellaneous Production Workers	0.3%	2	10%	3
37-3010	Grounds Maintenance Workers	0.3%	2	12%	2
45-2040	Graders and Sorters, Agricultural Products	0.3%	2	3%	2
11-1020	General and Operations Managers	0.2%	2	8%	2
43-9060	Office Clerks, General	0.2%	1	(2%)	1
49-3040	Heavy Vehicle and Mobile Equipment Service Technicians and Mechanics	0.2%	1	4%	1
13-2010	Accountants and Auditors	0.2%	1	1%	1
51-4120	Welding, Soldering, and Brazing Workers	0.2%	1	4%	1
11-1010	Chief Executives	0.2%	1	1%	1
47-2070	Construction Equipment Operators	0.1%	1	2%	1
49-9040	Industrial Machinery Installation, Repair, and Maintenance Workers	0.1%	1	4%	1
31-9090	Miscellaneous Healthcare Support Occupations	0.1%	1	9%	1
51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	0.1%	1	3%	1
51-3090	Miscellaneous Food Processing Workers	0.1%	1	(0%)	1
29-2050	Health Practitioner Support Technologists and Technicians	0.1%	1	20%	1
11-1030	Legislators	0.1%	1	6%	1
43-1010	First-Line Supervisors of Office and Administrative Support Workers	0.1%	1	3%	1

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53-7050	Industrial Truck and Tractor Operators	0.1%	1	11%	1
33-9030	Security Guards and Gambling Surveillance Officers	0.1%	1	3%	1
43-4050	Customer Service Representatives	0.1%	1	3%	1
11-3120	Human Resources Managers	0.1%	1	3%	1
51-1010	First-Line Supervisors of Production and Operating Workers	0.1%	1	9%	1
13-1020	Buyers and Purchasing Agents	0.1%	1	5%	1
45-3030	Fishing and Hunting Workers	0.1%	1	7%	1
11-9140	Property, Real Estate, and Community Association Managers	0.1%	1	5%	1
49-1010	First-Line Supervisors of Mechanics, Installers, and Repairers	0.1%	1	3%	1
43-5070	Shipping, Receiving, and Inventory Clerks	0.1%	1	6%	1
45-2010	Agricultural Inspectors	0.1%	1	3%	1
11-3050	Industrial Production Managers	0.1%	1	3%	1
49-3030	Bus and Truck Mechanics and Diesel Engine Specialists	0.1%	1	3%	1
13-1080	Logisticians and Project Management Specialists	0.1%	1	3%	1
	TOTAL	99.6%	782	5.9%	829

Table 12: Commercial Fishing

Commercial Fishing (11411)					
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
45-3030	Fishing and Hunting Workers	85.5%	4,767	22%	5,826
11-9190	Miscellaneous Managers	2.5%	137	22%	167
39-7010	Tour and Travel Guides	2.1%	118	29%	153
11-9010	Farmers, Ranchers, and Other Agricultural Managers	1.8%	100	31%	131
53-7060	Laborers and Material Movers	1.0%	57	38%	79
53-5020	Ship and Boat Captains and Operators	0.9%	52	6%	54
19-1020	Biological Scientists	0.6%	32	44%	46
41-9090	Miscellaneous Sales and Related Workers	0.6%	31	57%	48
53-5010	Sailors and Marine Oilers	0.5%	28	45%	41
45-2090	Miscellaneous Agricultural Workers	0.4%	23	54%	36
51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	0.4%	21	(6%)	20
45-1010	First-Line Supervisors of Farming, Fishing, and Forestry Workers	0.4%	21	(9%)	19
51-9190	Miscellaneous Production Workers	0.2%	12	5%	13
37-2010	Building Cleaning Workers	0.2%	12	47%	18
53-5030	Ship Engineers	0.2%	10	38%	14
43-6010	Secretaries and Administrative Assistants	0.2%	10	9%	10
43-3030	Bookkeeping, Accounting, and Auditing Clerks	0.2%	10	21%	12
49-9070	Maintenance and Repair Workers, General	0.2%	9	54%	14
33-3030	Fish and Game Wardens	0.1%	8	28%	11
41-1010	First-Line Supervisors of Sales Workers	0.1%	8	60%	13
43-9060	Office Clerks, General	0.1%	7	21%	9
49-9040	Industrial Machinery Installation, Repair, and Maintenance Workers	0.1%	7	72%	12
35-1010	Supervisors of Food Preparation and Serving Workers	0.1%	6	49%	10
53-3030	Driver/Sales Workers and Truck Drivers	0.1%	6	42%	9
43-3050	Payroll and Timekeeping Clerks	0.1%	6	62%	10

19-4020	Biological Technicians	0.1%	6	28%	7
49-3030	Bus and Truck Mechanics and Diesel Engine Specialists	0.1%	5	23%	7
11-1020	General and Operations Managers	0.1%	5	26%	6
19-2090	Miscellaneous Physical Scientists	0.1%	5	75%	8
51-8020	Stationary Engineers and Boiler Operators	0.1%	4	28%	6
51-3090	Miscellaneous Food Processing Workers	0.1%	4	28%	5
13-1120	Meeting, Convention, and Event Planners	0.1%	4	52%	6
33-3040	Parking Enforcement Workers	0.1%	4	(30%)	3
43-1010	First-Line Supervisors of Office and Administrative Support Workers	0.1%	4	28%	5
45-2010	Agricultural Inspectors	0.1%	4	28%	5
11-1030	Legislators	0.1%	3	28%	4
35-2010	Cooks	0.1%	3	28%	4
11-1010	Chief Executives	0.1%	3	32%	4
	LESS THAN 0.1% of Industry	N/A	24	N/A	24
	TOTAL	99.6%	5,578	23.1%	6,867

Table 13: Seafood Prep and Packaging

Seafood Prep and Packaging (31171)					
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
51-3020	Butchers and other meat, poultry, and fish processing workers	28.1%	192	-7.0%	179
53-7060	Laborers and material movers	15.2%	104	-7.0%	97
51-9111	Packaging and filling machine operators and tenders	7.0%	48	-7.0%	45
51-3090	Miscellaneous food processing workers	5.4%	37	-7.9%	34
51-1011	First-line supervisors of production and operating workers	4.1%	28	-7.0%	26

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51-9190	Miscellaneous production workers	3.0%	21	-10.8%	18
53-3030	Driver/sales workers and truck drivers	2.2%	15	-7.0%	14
49-9040	Industrial machinery installation, repair, and maintenance workers	2.0%	14	-7.0%	13
43-9061	Office clerks, general	1.9%	13	-16.3%	11
51-9061	Inspectors, testers, sorters, samplers, and weighers	1.9%	13	-7.0%	12
11-1021	General and operations managers	1.8%	12	-7.0%	11
49-9071	Maintenance and repair workers, general	1.8%	12	-7.0%	11
37-2010	Building cleaning workers	1.5%	10	-7.0%	10
41-4012	Sales representatives, wholesale and manufacturing, except technical and scientific products	1.5%	10	-7.0%	10
43-5071	Shipping, receiving, and inventory clerks	1.5%	10	-16.3%	9
53-7051	Industrial truck and tractor operators	1.3%	9	-7.0%	8
43-1011	First-line supervisors of office and administrative support workers	0.9%	6	-16.3%	5
43-6014	Secretaries and administrative assistants, except legal, medical, and executive	0.9%	6	-20.9%	5
43-3031	Bookkeeping, accounting, and auditing clerks	0.8%	5	-16.3%	5
53-1047	First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	0.8%	5	-7.0%	5
11-3051	Industrial production managers	0.7%	5	-7.0%	4
13-2011	Accountants and auditors	0.7%	5	-7.0%	4
49-9090	Miscellaneous installation, maintenance, and repair workers	0.5%	3	-7.0%	3
11-3031	Financial managers	0.4%	3	2.3%	3

13-1070	Human resources workers	0.4%	3	-8.8%	2
33-9030	Security guards and gambling surveillance officers	0.4%	3	-14.4%	2
47-2111	Electricians	0.4%	3	-7.0%	3
49-1011	First-line supervisors of mechanics, installers, and repairers	0.4%	3	-7.0%	3
11-2020	Marketing and sales managers	0.3%	2	-7.0%	2
11-9199	Managers, all other	0.3%	2	-7.0%	2
13-1020	Buyers and purchasing agents	0.3%	2	-16.3%	2
17-2110	Industrial engineers, including health and safety	0.3%	2	-7.0%	2
17-3020	Engineering technologists and technicians, except drafters	0.3%	2	-7.0%	2
19-4010	Agricultural and food science technicians	0.3%	2	-7.0%	2
35-2010	Cooks	0.3%	2	-5.5%	2
35-2021	Food preparation workers	0.3%	2	-7.0%	2
49-9021	Heating, air conditioning, and refrigeration mechanics and installers	0.3%	2	-7.0%	2
51-9010	Chemical processing machine setters, operators, and tenders	0.3%	2	-7.0%	2
51-9030	Cutting workers	0.3%	2	-16.3%	2
51-9041	Extruding, forming, pressing, and compacting machine setters, operators, and tenders	0.3%	2	-7.0%	2
53-5011	Sailors and marine oilers	0.3%	2	-7.0%	2
13-1080	Logisticians and project management specialists	0.2%	1	11.9%	2
13-1161	Market research analysts and marketing specialists	0.2%	1	2.3%	1

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19-1010	Agricultural and food scientists	0.2%	1	-7.0%	1
19-4090	Miscellaneous life, physical, and social science technicians	0.2%	1	-7.0%	1
19-5011	Occupational health and safety specialists	0.2%	1	-7.0%	1
35-1011	Chefs and head cooks	0.2%	1	-7.0%	1
35-1012	First-line supervisors of food preparation and serving workers	0.2%	1	-7.0%	1
43-3021	Billing and posting clerks	0.2%	1	-16.3%	1
43-3051	Payroll and timekeeping clerks	0.2%	1	-25.6%	1
43-4051	Customer service representatives	0.2%	1	-16.3%	1
43-5061	Production, planning, and expediting clerks	0.2%	1	-7.0%	1
43-6011	Executive secretaries and executive administrative assistants	0.2%	1	-30.2%	1
45-2090	Miscellaneous agricultural workers	0.2%	1	-10.7%	1
51-4120	Welding, soldering, and brazing workers	0.2%	1	-7.3%	1
51-6011	Laundry and dry-cleaning workers	0.2%	1	-7.0%	1
51-8031	Water and wastewater treatment plant and system operators	0.2%	1	-16.3%	1
	LESS THAN 0.1% of Industry	5.4%	37	N/A	37
	TOTAL	94.6%	684	-7.5%	633

Table 14: Frozen Specialty Food Manufacturing

	Frozen Specialty Food Mfg (311412)				
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
51-3090	Miscellaneous food processing workers	18.50%	14	1.2%	14
51-9111	Packaging and filling machine operators and tenders	17.30%	13	0.3%	13
53-7060	Laborers and material movers	11.00%	8	0.2%	8
53-7051	Industrial truck and tractor operators	5.00%	4	0.1%	4
49-9040	Industrial machinery installation, repair, and maintenance workers	4.90%	4	1.7%	4
51-1011	First-line supervisors of production and operating workers	4.00%	3	0.1%	3
51-9190	Miscellaneous production workers	3.60%	3	-0.3%	3
51-9061	Inspectors, testers, sorters, samplers, and weighers	3.50%	3	0.1%	3
49-9071	Maintenance and repair workers, general	2.70%	2	0.0%	2
51-2090	Miscellaneous assemblers and fabricators	2.70%	2	-0.7%	2
43-5071	Shipping, receiving, and inventory clerks	1.60%	1	-0.3%	1
37-2010	Building cleaning workers	1.40%	1	0.0%	1
11-3051	Industrial production managers	1.10%	1	0.0%	1
53-3030	Driver/sales workers and truck drivers	1.10%	1	0.0%	1
11-1021	General and operations managers	1.00%	1	0.0%	1

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41-4012	Sales representatives, wholesale and manufacturing, except technical and scientific products	1.00%	1	0.0%	1
43-9061	Office clerks, general	1.00%	1	-0.2%	1
43-5061	Production, planning, and expediting clerks	0.90%	1	0.0%	1
49-1011	First-line supervisors of mechanics, installers, and repairers	0.80%	1	0.0%	1
19-4010	Agricultural and food science technicians	0.70%	1	0.0%	1
43-3031	Bookkeeping, accounting, and auditing clerks	0.70%	1	-0.1%	1
53-1047	First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	0.70%	1	0.0%	1
	LESS THAN 0.1% of Industry	14.3%	11	N/A	11
	TOTAL	99.49%	77	0.0%	77

Table 15: Boat Building and Repair

Boat Building and Repair (336612)					
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
51-4120	Welding, soldering, and brazing workers	10.4%	267	-9.1%	243
51-2090	Miscellaneous assemblers and fabricators	6.6%	170	-18.7%	138
51-2051	Fiberglass laminators and fabricators	5.4%	139	-4.3%	133
51-1011	First-line supervisors of production and operating workers	4.4%	113	-4.3%	108
51-9120	Painting workers	3.9%	100	-4.3%	96
51-2041	Structural metal fabricators and fitters	3.7%	95	-23.5%	73
47-2111	Electricians	3.4%	87	-4.3%	84

51-4041	Machinists	3.1%	80	-4.3%	76
53-7060	Laborers and material movers	2.9%	75	-4.3%	71
47-2150	Pipelayers, plumbers, pipefitters, and steamfitters	2.7%	69	-4.3%	66
51-9061	Inspectors, testers, sorters, samplers, and weighers	2.1%	54	-18.7%	44
47-2211	Sheet metal workers	2.0%	51	-4.3%	49
49-9090	Miscellaneous installation, maintenance, and repair workers	2.0%	51	-4.4%	49
51-4190	Miscellaneous metal workers and plastic workers	2.0%	51	-18.4%	42
13-1080	Logisticians and project management specialists	1.8%	46	0.3%	46
17-2121	Marine engineers and naval architects	1.8%	46	0.4%	46
51-9190	Miscellaneous production workers	1.8%	46	-11.2%	41
11-1021	General and operations managers	1.7%	44	-4.3%	42
47-2031	Carpenters	1.7%	44	-4.3%	42
49-3050	Small engine mechanics	1.4%	36	-4.3%	34
47-1011	First-line supervisors of construction trades and extraction workers	1.3%	33	-4.3%	32
13-1020	Buyers and purchasing agents	1.2%	31	-13.9%	27
17-3010	Drafters	1.0%	26	-10.6%	23
43-5061	Production, planning, and expediting clerks	1.0%	26	-4.3%	25
49-9071	Maintenance and repair workers, general	1.0%	26	-4.3%	25
13-1051	Cost estimators	0.9%	23	-9.1%	21

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17-2110	Industrial engineers, including health and safety	0.9%	23	-4.3%	22
43-6014	Secretaries and administrative assistants, except legal, medical, and executive	0.9%	23	-18.7%	19
51-4030	Machine tool cutting setters, operators, and tenders, metal and plastic	0.9%	23	-15.0%	20
17-2141	Mechanical engineers	0.8%	21	-4.3%	20
43-3031	Bookkeeping, accounting, and auditing clerks	0.8%	21	-13.9%	18
43-9061	Office clerks, general	0.8%	21	-13.9%	18
47-2140	Painters and paperhangers	0.8%	21	-4.3%	20
49-9040	Industrial machinery installation, repair, and maintenance workers	0.8%	21	-4.2%	20
51-9020	Crushing, grinding, polishing, mixing, and blending workers	0.8%	21	-20.5%	16
11-3051	Industrial production managers	0.7%	18	-4.3%	17
13-2011	Accountants and auditors	0.6%	15	-4.3%	15
19-5011	Occupational health and safety specialists	0.6%	15	-4.3%	15
27-1020	Designers	0.6%	15	-4.3%	15
43-5071	Shipping, receiving, and inventory clerks	0.6%	15	-13.9%	13
13-1070	Human resources workers	0.5%	13	-6.7%	12
49-1011	First-line supervisors of mechanics, installers, and repairers	0.5%	13	-4.3%	12
51-6090	Miscellaneous textile, apparel, and furnishings workers	0.5%	13	-4.3%	12
11-9041	Architectural and engineering managers	0.4%	10	-4.3%	10
13-1199	Business operations specialists, all other	0.4%	10	-4.3%	10

33-9030	Security guards and gambling surveillance officers	0.4%	10	-12.0%	9
41-4012	Sales representatives, wholesale and manufacturing, except technical and scientific products	0.4%	10	-4.3%	10
43-1011	First-line supervisors of office and administrative support workers	0.4%	10	-13.9%	9
53-3030	Driver/sales workers and truck drivers	0.4%	10	-4.3%	10
11-3031	Financial managers	0.3%	8	5.2%	8
15-1240	Database and network administrators and architects	0.3%	8	-8.8%	7
17-2199	Engineers, all other	0.3%	8	-4.3%	7
37-2010	Building cleaning workers	0.3%	8	-4.3%	7
47-2061	Construction laborers	0.3%	8	-4.3%	7
47-2130	Insulation workers	0.3%	8	-4.3%	7
51-4070	Molders and molding machine setters, operators, and tenders, metal and plastic	0.3%	8	-9.1%	7
51-6031	Sewing machine operators	0.3%	8	-4.3%	7
53-7021	Crane and tower operators	0.3%	8	-4.3%	7
11-9021	Construction managers	0.2%	5	5.2%	5
11-9199	Managers, all other	0.2%	5	-4.3%	5
13-1151	Training and development specialists	0.2%	5	-4.3%	5
15-1210	Computer and information analysts	0.2%	5	4.9%	5
41-3091	Sales representatives of services, except advertising, insurance, financial services, and travel	0.2%	5	-4.3%	5
43-4051	Customer service representatives	0.2%	5	-13.9%	4

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47-2221	Structural iron and steel workers	0.2%	5	-4.3%	5
47-3019	Helpers, construction trades, all other	0.2%	5	-4.3%	5
49-9021	Heating, air conditioning, and refrigeration mechanics and installers	0.2%	5	-4.3%	5
51-9160	Computer numerically controlled tool operators and programmers	0.2%	5	-10.7%	5
53-1047	First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	0.2%	5	-4.3%	5
53-5020	Ship and boat captains and operators	0.2%	5	-4.3%	5
53-7051	Industrial truck and tractor operators	0.2%	5	-4.3%	5
11-1011	Chief executives	0.1%	3	-18.7%	2
11-2020	Marketing and sales managers	0.1%	3	-4.3%	2
11-3010	Administrative services and facilities managers	0.1%	3	-4.3%	2
11-3021	Computer and information systems managers	0.1%	3	2.3%	3
11-3061	Purchasing managers	0.1%	3	-4.3%	2
11-3071	Transportation, storage, and distribution managers	0.1%	3	-4.3%	2
11-3121	Human resources managers	0.1%	3	-4.3%	2
13-1041	Compliance officers	0.1%	3	-4.3%	2
13-1111	Management analysts	0.1%	3	-4.3%	2
13-1141	Compensation, benefits, and job analysis specialists	0.1%	3	-4.3%	2
13-1161	Market research analysts and marketing specialists	0.1%	3	5.2%	3
13-2031	Budget analysts	0.1%	3	-4.3%	2

15-1230	Computer support specialists	0.1%	3	-7.7%	2
17-2131	Materials engineers	0.1%	3	-4.3%	2
27-3040	Writers and editors	0.1%	3	-4.3%	2
33-2011	Firefighters	0.1%	3	-4.3%	2
41-2020	Counter and rental clerks and parts salespersons	0.1%	3	-4.3%	2
41-2031	Retail salespersons	0.1%	3	-4.3%	2
43-3021	Billing and posting clerks	0.1%	3	-13.9%	2
43-3051	Payroll and timekeeping clerks	0.1%	3	-23.5%	2
43-3061	Procurement clerks	0.1%	3	-13.9%	2
43-4171	Receptionists and information clerks	0.1%	3	-18.7%	2
43-6011	Executive secretaries and executive administrative assistants	0.1%	3	-28.3%	2
47-2070	Construction equipment operators	0.1%	3	-4.3%	2
47-3013	Helpers--electricians	0.1%	3	-4.3%	2
47-3015	Helpers--pipelayers, plumbers, pipefitters, and steamfitters	0.1%	3	-4.3%	2
47-4011	Construction and building inspectors	0.1%	3	-4.3%	2
49-3040	Heavy vehicle and mobile equipment service technicians and mechanics	0.1%	3	-4.3%	2
51-2020	Electrical, electronics, and electromechanical assemblers	0.1%	3	-4.3%	2
51-4111	Tool and die makers	0.1%	3	-4.3%	2
51-7011	Cabinetmakers and bench carpenters	0.1%	3	-4.3%	2

51-7040	Woodworking machine setters, operators, and tenders	0.1%	3	-4.3%	2
51-9030	Cutting workers	0.1%	3	-11.2%	2
	LESS THAN 0.1% of Industry	5.7%	147	N/A	147
	TOTAL	94.3%	2,571	-7.7%	2,373

Table 16: Fish/Seafood Merchant Wholesalers

Fish/Seafood Merchant Wholesalers (42446)					
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
53-7060	Laborers and material movers	16.10%	236	2.40%	242
53-3030	Driver/sales workers and truck drivers	14.90%	219	3.60%	227
41-4012	Sales representatives, wholesale and manufacturing, except technical and scientific products	12.70%	186	3.60%	193
11-1021	General and operations managers	3.80%	56	3.70%	58
27-1020	Designers	3.10%	46	3.60%	47
43-4051	Customer service representatives	2.80%	41	-6.70%	38
43-9061	Office clerks, general	2.50%	37	-6.60%	34
41-4011	Sales representatives, wholesale and manufacturing, technical and scientific products	2.30%	34	3.40%	35
43-5071	Shipping, receiving, and inventory clerks	2.30%	34	-6.70%	32
11-2020	Marketing and sales managers	2.20%	32	3.60%	33
53-1047	First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	2.20%	32	3.70%	33

43-3031	Bookkeeping, accounting, and auditing clerks	2.00%	29	-6.70%	27
45-2090	Miscellaneous agricultural workers	1.60%	23	4.60%	25
53-7051	Industrial truck and tractor operators	1.60%	23	3.70%	24
43-1011	First-line supervisors of office and administrative support workers	1.30%	19	-6.30%	18
43-6014	Secretaries and administrative assistants, except legal, medical, and executive	1.20%	18	-	16
13-1020	Buyers and purchasing agents	1.10%	16	-6.70%	15
13-1161	Market research analysts and marketing specialists	1.10%	16	14.00%	18
41-1012	First-line supervisors of non-retail sales workers	1.10%	16	3.60%	17
13-2011	Accountants and auditors	1.00%	15	3.70%	15
41-2031	Retail salespersons	0.90%	13	3.70%	14
49-9071	Maintenance and repair workers, general	0.80%	12	3.70%	12
51-9111	Packaging and filling machine operators and tenders	0.80%	12	3.60%	12
13-1080	Logisticians and project management specialists	0.60%	9	22.60%	11
13-1199	Business operations specialists, all other	0.60%	9	3.60%	9
43-4151	Order clerks	0.60%	9	-	7
43-5061	Production, planning, and expediting clerks	0.60%	9	3.70%	9
11-3031	Financial managers	0.50%	7	14.00%	8
11-3071	Transportation, storage, and distribution managers	0.50%	7	6.40%	8
29-2050	Health practitioner support technologists and technicians	0.50%	7	3.40%	8

41-2010	Cashiers	0.50%	7	- 11.90%	6
51-1011	First-line supervisors of production and operating workers	0.50%	7	3.60%	8
51-3020	Butchers and other meat, poultry, and fish processing workers	0.50%	7	3.70%	8
51-9061	Inspectors, testers, sorters, samplers, and weighers	0.50%	7	- 11.90%	6
13-1070	Human resources workers	0.40%	6	1.50%	6
29-1051	Pharmacists	0.40%	6	3.40%	6
37-2010	Building cleaning workers	0.40%	6	3.70%	6
51-2090	Miscellaneous assemblers and fabricators	0.40%	6	- 12.00%	5
51-9020	Crushing, grinding, polishing, mixing, and blending workers	0.40%	6	2.70%	6
51-9190	Miscellaneous production workers	0.40%	6	2.00%	6
11-9199	Managers, all other	0.30%	4	3.50%	5
15-1230	Computer support specialists	0.30%	4	0.10%	4
15-1250	Software and web developers, programmers, and testers	0.30%	4	13.50%	5
37-3012	Pesticide handlers, sprayers, and applicators, vegetation	0.30%	4	3.80%	5
41-3091	Sales representatives of services, except advertising, insurance, financial services, and travel	0.30%	4	3.60%	5
43-3021	Billing and posting clerks	0.30%	4	-6.70%	4
49-3031	Bus and truck mechanics and diesel engine specialists	0.30%	4	-1.50%	4
49-9040	Industrial machinery installation, repair, and maintenance workers	0.30%	4	3.60%	5
49-9090	Miscellaneous installation, maintenance, and repair workers	0.30%	4	3.50%	5

51-3090	Miscellaneous food processing workers	0.30%	4	3.30%	5
11-1011	Chief executives	0.20%	3	11.90%	3
11-3010	Administrative services and facilities managers	0.20%	3	3.60%	3
11-3021	Computer and information systems managers	0.20%	3	10.90%	3
11-3051	Industrial production managers	0.20%	3	3.60%	3
13-1041	Compliance officers	0.20%	3	3.50%	3
13-1111	Management analysts	0.20%	3	3.60%	3
13-1151	Training and development specialists	0.20%	3	3.60%	3
15-1240	Database and network administrators and architects	0.20%	3	-0.20%	3
41-1011	First-line supervisors of retail sales workers	0.20%	3	3.70%	3
41-9090	Miscellaneous sales and related workers	0.20%	3	3.80%	3
43-4171	Receptionists and information clerks	0.20%	3	11.90%	3
43-5030	Dispatchers	0.20%	3	-1.50%	3
43-5111	Weighers, measurers, checkers, and samplers, recordkeeping	0.20%	3	-6.40%	3
43-6011	Executive secretaries and executive administrative assistants	0.20%	3	22.20%	2
49-1011	First-line supervisors of mechanics, installers, and repairers	0.20%	3	3.70%	3
51-6031	Sewing machine operators	0.20%	3	4.00%	3
51-8090	Miscellaneous plant and system operators	0.20%	3	3.10%	3
53-7011	Conveyor operators and tenders	0.20%	3	4.90%	3

11-3061	Purchasing managers	0.10%	1	3.60%	2
11-3121	Human resources managers	0.10%	1	3.60%	2
11-9111	Medical and health services managers	0.10%	1	24.00%	2
11-9121	Natural sciences managers	0.10%	1	3.40%	2
13-2050	Financial analysts and advisors	0.10%	1	3.60%	2
15-1210	Computer and information analysts	0.10%	1	6.60%	2
15-1299	Computer occupations, all other	0.10%	1	3.70%	2
17-2110	Industrial engineers, including health and safety	0.10%	1	3.50%	2
19-1010	Agricultural and food scientists	0.10%	1	3.80%	2
19-1040	Medical scientists	0.10%	1	3.40%	2
19-2030	Chemists and materials scientists	0.10%	1	3.40%	2
19-4010	Agricultural and food science technicians	0.10%	1	3.80%	2
19-4031	Chemical technicians	0.10%	1	3.40%	2
19-5011	Occupational health and safety specialists	0.10%	1	3.60%	2
27-3031	Public relations specialists	0.10%	1	3.70%	2
35-2021	Food preparation workers	0.10%	1	3.70%	2
35-3023	Fast food and counter workers	0.10%	1	3.70%	2
37-3011	Landscaping and groundskeeping workers	0.10%	1	3.60%	2
41-2020	Counter and rental clerks and parts salespersons	0.10%	1	3.60%	2

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41-9010	Models, demonstrators, and product promoters	0.10%	1	3.70%	2
43-3011	Bill and account collectors	0.10%	1	-6.70%	1
43-3051	Payroll and timekeeping clerks	0.10%	1	-	1
43-3061	Procurement clerks	0.10%	1	-6.70%	1
43-4161	Human resources assistants, except payroll and timekeeping	0.10%	1	-6.70%	1
43-9020	Data entry and information processing workers	0.10%	1	-	1
45-1011	First-line supervisors of farming, fishing, and forestry workers	0.10%	1	27.60%	2
45-2041	Graders and sorters, agricultural products	0.10%	1	4.00%	1
49-3020	Automotive technicians and repairers	0.10%	1	-6.40%	1
49-3040	Heavy vehicle and mobile equipment service technicians and mechanics	0.10%	1	-6.20%	2
49-9021	Heating, air conditioning, and refrigeration mechanics and installers	0.10%	1	3.80%	2
51-3011	Bakers	0.10%	1	3.60%	2
51-5112	Printing press operators	0.10%	1	3.70%	2
51-9010	Chemical processing machine setters, operators, and tenders	0.10%	1	3.60%	2
51-9030	Cutting workers	0.10%	1	3.80%	1
53-6030	Transportation service attendants	0.10%	1	-9.30%	2
53-7070	Pumping station operators	0.10%	1	3.60%	2
53-7121	Tank car, truck, and ship loaders	0.10%	1	3.50%	2
	LESS THAN 0.1% of Industry	1.98%	29	N/A	29
	TOTAL	99.98%	1,468	1.6%	1,491

Table 17: Fish and Seafood Markets

Fish and Seafood Markets (445220)					
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
41-2010	Cashiers	28.5%	118	-14.6%	101
53-7060	Laborers and material movers	24.6%	102	3.3%	105
35-2021	Food preparation workers	6.0%	25	-0.4%	25
41-1011	First-line supervisors of retail sales workers	5.4%	22	-5.2%	21
51-3020	Butchers and other meat, poultry, and fish processing workers	4.5%	19	-5.2%	18
35-3023	Fast food and counter workers	4.2%	17	-5.2%	17
43-4051	Customer service representatives	3.8%	16	-14.6%	13
41-2031	Retail salespersons	3.7%	15	-5.2%	15
51-3011	Bakers	1.8%	7	-5.2%	7
53-1047	First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	1.7%	7	-5.2%	7
11-1021	General and operations managers	1.4%	6	-5.2%	6
29-2050	Health practitioner support technologists and technicians	1.4%	6	2.4%	6
35-1012	First-line supervisors of food preparation and serving workers	1.1%	5	-5.2%	4
41-9090	Miscellaneous sales and related workers	1.1%	5	-5.2%	4
35-2010	Cooks	1.0%	4	-1.9%	4

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43-5071	Shipping, receiving, and inventory clerks	1.0%	4	-14.6%	4
37-2010	Building cleaning workers	0.9%	4	-5.2%	4
29-1051	Pharmacists	0.8%	3	-9.9%	3
51-1011	First-line supervisors of production and operating workers	0.8%	3	-5.2%	3
43-1011	First-line supervisors of office and administrative support workers	0.7%	3	-14.6%	2
43-9061	Office clerks, general	0.6%	2	-14.6%	2
43-3031	Bookkeeping, accounting, and auditing clerks	0.5%	2	-14.6%	2
51-3090	Miscellaneous food processing workers	0.4%	2	-5.5%	2
27-1020	Designers	0.3%	1	-8.7%	1
53-3030	Driver/sales workers and truck drivers	0.3%	1	-4.0%	1
11-2020	Marketing and sales managers	0.2%	1	-5.2%	1
13-1020	Buyers and purchasing agents	0.2%	1	-14.6%	1
35-9021	Dishwashers	0.2%	1	-5.2%	1
49-9071	Maintenance and repair workers, general	0.2%	1	-5.2%	1
53-6030	Transportation service attendants	0.2%	1	-5.2%	1
	LESS THAN 0.1% of Industry	1.4%	6	N/A	6
	TOTAL	98.6%	415	-6.0%	390

Peripheral Industry Sectors in the Marine Living Resources Economy

Table 18: Restaurants and Other Eating Places

Restaurants and Other Eating Places (72251)					
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
53-7060	Laborers and material movers	0.1%	20	17%	24
13-1161	Market research analysts and marketing specialists	0.1%	20	29%	26
33-9030	Security guards and gambling surveillance officers	0.1%	20	11%	23
43-4051	Customer service representatives	0.1%	20	4%	21
41-1011	First-line supervisors of retail sales workers	0.1%	20	16%	24
43-6014	Secretaries and administrative assistants, except legal, medical, and executive	0.1%	20	0%	20
51-3090	Miscellaneous food processing workers	0.1%	20	12%	23
41-2031	Retail salespersons	0.1%	20	19%	24
43-9061	Office clerks, general	0.2%	41	7%	43
35-3041	Food servers, nonrestaurant	0.2%	41	15%	47
43-3031	Bookkeeping, accounting, and auditing clerks	0.2%	41	7%	44
13-1151	Training and development specialists	0.2%	41	14%	47
49-9071	Maintenance and repair workers, general	0.2%	41	16%	47
37-2010	Building cleaning workers	0.3%	61	17%	72

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51-3011	Bakers	0.4%	82	14%	93
35-9099	Food preparation and serving related workers, all other	0.5%	102	17%	120
35-1011	Chefs and head cooks	0.8%	163	20%	196
11-1021	General and operations managers	1.3%	265	17%	310
11-9051	Food service managers	1.7%	347	17%	407
35-9011	Dining room and cafeteria attendants and bartender helpers	2.2%	449	21%	542
35-3011	Bartenders	2.3%	470	21%	568
53-3030	Driver/sales workers and truck drivers	2.6%	531	21%	642
35-9021	Dishwashers	3.1%	633	10%	694
35-9031	Hosts and hostesses, restaurant, lounge, and coffee shop	3.1%	633	15%	730
41-2010	Cashiers	3.7%	755	(4%)	727
35-2021	Food preparation workers	4.2%	857	5%	904
35-1012	First-line supervisors of food preparation and serving workers	8.6%	1,756	16%	2,030
35-3031	Waiters and waitresses	16.4%	3,348	10%	3,666
35-2010	Cooks	19.8%	4,042	17%	4,746
35-3023	Fast food and counter workers	26.8%	5,471	8%	5,887
	LESS THAN 0.1% of Industry	N/A	82	N/A	82
	TOTAL	99.6%	20,415	11.8%	22,828

Table 19: Grocery Stores and Supermarkets

Grocery Stores and Supermarkets (445110)					
SOC	Occupation Description	Percent of Industry	2022 Jobs	2033 Change	2033 Jobs
41-2010	Cashiers	28.5%	473	-14.6%	404
53-7060	Laborers and material movers	24.6%	408	3.3%	421
35-2021	Food preparation workers	6.0%	99	-0.4%	99
41-1011	First-line supervisors of retail sales workers	5.4%	90	-5.2%	85
51-3020	Butchers and other meat, poultry, and fish processing workers	4.5%	75	-5.2%	71
35-3023	Fast food and counter workers	4.2%	70	-5.2%	66
43-4051	Customer service representatives	3.8%	63	-14.6%	54
41-2031	Retail salespersons	3.7%	61	-5.2%	58
51-3011	Bakers	1.8%	30	-5.2%	28
53-1047	First-line supervisors of transportation and material moving workers, except aircraft cargo handling supervisors	1.7%	28	-5.2%	27
11-1021	General and operations managers	1.4%	23	-5.2%	22
29-2050	Health practitioner support technologists and technicians	1.4%	23	2.4%	24
35-1012	First-line supervisors of food preparation and serving workers	1.1%	18	-5.2%	17
41-9090	Miscellaneous sales and related workers	1.1%	18	-5.2%	17
35-2010	Cooks	1.0%	17	-1.9%	16
43-5071	Shipping, receiving, and inventory clerks	1.0%	17	-14.6%	14
37-2010	Building cleaning workers	0.9%	15	-5.2%	14
29-1051	Pharmacists	0.8%	13	-9.9%	12
51-1011	First-line supervisors of production and operating workers	0.8%	13	-5.2%	13
43-1011	First-line supervisors of office and administrative support workers	0.7%	12	-14.6%	10
43-9061	Office clerks, general	0.6%	10	-14.6%	8
43-3031	Bookkeeping, accounting, and auditing clerks	0.5%	8	-14.6%	7

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51-3090	Miscellaneous food processing workers	0.4%	7	-5.5%	6
27-1020	Designers	0.3%	5	-8.7%	5
53-3030	Driver/sales workers and truck drivers	0.3%	5	-4.0%	5
11-2020	Marketing and sales managers	0.2%	3	-5.2%	3
13-1020	Buyers and purchasing agents	0.2%	3	-14.6%	3
35-9021	Dishwashers	0.2%	3	-5.2%	3
49-9071	Maintenance and repair workers, general	0.2%	3	-5.2%	3
53-6030	Transportation service attendants	0.2%	3	-5.2%	3
13-1070	Human resources workers	0.1%	2	-7.1%	2
13-1151	Training and development specialists	0.1%	2	-5.2%	2
13-1199	Business operations specialists, all other	0.1%	2	-5.2%	2
31-9090	Miscellaneous healthcare support occupations	0.1%	2	-9.9%	1
33-9030	Security guards and gambling surveillance officers	0.1%	2	-12.7%	1
35-3031	Waiters and waitresses	0.1%	2	-5.2%	2
41-2020	Counter and rental clerks and parts salespersons	0.1%	2	-5.2%	2
41-9010	Models, demonstrators, and product promoters	0.1%	2	-5.2%	2
43-5111	Weighers, measurers, checkers, and samplers, recordkeeping	0.1%	2	-14.6%	1
43-6014	Secretaries and administrative assistants, except legal, medical, and executive	0.1%	2	-19.4%	1
45-2090	Miscellaneous agricultural workers	0.1%	2	-9.5%	2
	LESS THAN 0.1% of Industry	N/A	23	N/A	23
	TOTAL	98.6%	1,658	-6.0%	1,558

Table 20: All Core Sector Occupations (with greater than 0.1% of Employment in an Industry)

SOC	Description	MLR Description (As Applicable)	2022 Sector Jobs	2033 Sector Jobs	Percent Change 2033	2021 Avg. Hourly Earnings
45-3030	Fishing and Hunting Workers	Sternman/Deckhand AND Captain/Fisherman	4,768	5,826	22%	\$42.60
53-7060	Laborers and Material Movers	Doc/Float Worker, Forklift Operators, Loaders/Unloaders (Transportation)	630	651	3%	\$16.21
53-3030	Driver/Sales Workers and Truck Drivers	Delivery Drivers, Wholesale and Retail (Route)	559	577	3%	\$22.07
11-9010	Farmers, Ranchers, and Other Agricultural Managers	Farm Managers, Hatchery Managers, RAS Production Managers	498	554	11%	\$23.61
45-2090	Miscellaneous Agricultural Workers	Farm Hand, Saltwater Marine Technician, Deckhand, Hatchery Technician, RAS Production Technician	326	355	9%	\$15.49
51-4120	Welding, Soldering, and Brazing Workers	Shipyard/Boatyard Workers, Factory Maintenance Workers, Drydock/Repair Workers	270	246	-9%	\$23.34
41-4010	Sales Representatives, Wholesale and Manufacturing	Sales Representatives, Wholesale Distribution	242	248	2%	\$36.68
51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	Seafood Production Workers, Retail Fish/Seafood Workers	241	225	-6%	\$16.57
51-2090	Miscellaneous Assemblers and Fabricators	Shipyard/Boatyard Workers, Packagers/Product Assembly Workers	178	145	-18%	\$18.68
51-1010	First-Line Supervisors of Production and Operating Workers	Processing Plant Managers or Boat Building/Repair Supervisors	156	149	-4%	\$32.79

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11-9190	Miscellaneous Managers	Commercial Fishing Sector	154	184	19%	\$42.83
51-2050	Fiberglass Laminators and Fabricators	Shipbuilders	139	133	-4%	\$20.21
11-1020	General and Operations Managers	GMs, all Sectors	136	136	0%	\$47.62
41-2010	Cashiers	Cashiers	126	107	-14%	\$14.08
39-7010	Tour and Travel Guides	Tour and Travel Guides (Commercial Fishing Sector)	118	153	29%	\$22.62
51-9120	Painting Workers	Painting Workers	100	96	-4%	\$23.66
43-9060	Office Clerks, General	Office Clerks, General	96	89	-7%	\$18.65
51-2040	Structural Metal Fabricators and Fitters	Structural Metal Fabricators and Fitters	95	73	-24%	\$23.73
47-2110	Electricians	Electricians	90	86	-4%	\$28.51
51-9190	Miscellaneous Production Workers	Miscellaneous Production Workers	90	83	-7%	\$18.55
51-4040	Machinists	Machinists	80	76	-4%	\$23.88
43-3030	Bookkeeping, Accounting, and Auditing Clerks	Bookkeeping, Accounting, and Auditing Clerks	79	74	-6%	\$21.12
51-9060	Inspectors, Testers, Sorters, Samplers, and Weighers	Inspectors, Testers, Sorters, Samplers, and Weighers	77	65	-15%	\$22.99
43-6010	Secretaries and Administrative Assistants	Secretaries and Administrative Assistants	73	62	-15%	\$20.69
51-9110	Packaging and Filling Machine Operators and Tenders	Packaging and Filling Machine Operators and Tenders	73	70	-4%	\$18.83
43-4050	Customer Service Representatives	Customer Service Representatives	70	63	-10%	\$18.52
47-2150	Pipelayers, Plumbers, Pipefitters, and Steamfitters	Pipelayers, Plumbers, Pipefitters, and Steamfitters	69	66	-4%	\$26.73
43-5070	Shipping, Receiving, and Inventory Clerks	Shipping, Receiving, and Inventory Clerks	67	60	-10%	\$19.29

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49-9070	Maintenance and Repair Workers, General	Maintenance and Repair Workers, General	67	71	6%	\$21.24
53-1040	First-Line Supervisors of Transportation and Material Moving Workers	First-Line Supervisors of Transportation and Material Moving Workers	64	65	1%	\$26.52
51-3090	Miscellaneous Food Processing Workers	Miscellaneous Food Processing Workers	62	61	-2%	\$16.89
27-1020	Designers	Designers	62	63	1%	\$26.61
49-9090	Miscellaneous Installation, Maintenance, and Repair Workers	Miscellaneous Installation, Maintenance, and Repair Workers	61	58	-4%	\$23.58
13-1080	Logisticians and Project Management Specialists	Logisticians and Project Management Specialists	59	62	5%	\$39.50
53-5020	Ship and Boat Captains and Operators	Ship and Boat Captains and Operators	57	59	5%	\$35.45
47-2210	Sheet Metal Workers	Sheet Metal Workers	51	49	-4%	\$24.38
51-4190	Miscellaneous Metal Workers and Plastic Workers	Miscellaneous Metal Workers and Plastic Workers	51	42	-18%	\$22.89
13-1020	Buyers and Purchasing Agents	Buyers and Purchasing Agents	50	45	-11%	\$33.09
49-9040	Industrial Machinery Installation, Repair, and Maintenance Workers	Industrial Machinery Installation, Repair, and Maintenance Workers	50	54	7%	\$27.14
53-7050	Industrial Truck and Tractor Operators	Industrial Truck and Tractor Operators	50	50	0%	\$19.64
41-1010	First-Line Supervisors of Sales Workers	First-Line Supervisors of Sales Workers	50	54	9%	\$27.60
35-2020	Food Preparation Workers	Food Preparation Workers	47	46	-2%	\$15.00
43-1010	First-Line Supervisors of Office and Administrative Support Workers	First-Line Supervisors of Office and Administrative Support Workers	47	44	-6%	\$27.55
37-2010	Building Cleaning Workers	Building Cleaning Workers	47	52	11%	\$16.74

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17-2120	Marine Engineers and Naval Architects	Marine Engineers and Naval Architects	46	46	0%	\$49.37
47-2030	Carpenters	Carpenters	44	42	-4%	\$24.97
41-9090	Miscellaneous Sales and Related Workers	Miscellaneous Sales and Related Workers	41	59	43%	\$18.31
11-2020	Marketing and Sales Managers	Marketing and Sales Managers	38	39	2%	\$56.54
43-5060	Production, Planning, and Expediting Clerks	Production, Planning, and Expediting Clerks	38	37	-2%	\$25.83
13-2010	Accountants and Auditors	Accountants and Auditors	37	37	0%	\$35.41
49-3050	Small Engine Mechanics	Small Engine Mechanics	36	34	-4%	\$20.85
47-1010	First-Line Supervisors of Construction Trades and Extraction Workers	First-Line Supervisors of Construction Trades and Extraction Workers	33	32	-4%	\$31.05
45-1010	First-Line Supervisors of Farming, Fishing, and Forestry Workers	First-Line Supervisors of Farming, Fishing, and Forestry Workers	33	32	-3%	\$26.22
19-1020	Biological Scientists	Biological Scientists	32	46	44%	\$35.24
41-2030	Retail Salespersons	Retail Salespersons	31	31	-1%	\$16.65
53-5010	Sailors and Marine Oilers	Sailors and Marine Oilers	30	43	43%	\$21.80
49-3030	Bus and Truck Mechanics and Diesel Engine Specialists	Bus and Truck Mechanics and Diesel Engine Specialists	29	30	3%	\$23.56
11-3050	Industrial Production Managers	Industrial Production Managers	28	27	-4%	\$48.59
17-2110	Industrial Engineers, Including Health and Safety	Industrial Engineers, Including Health and Safety	27	26	-4%	\$44.22
51-9020	Crushing, Grinding, Polishing, Mixing, and Blending Workers	Crushing, Grinding, Polishing, Mixing, and Blending Workers	26	22	-15%	\$22.88
17-3010	Drafters	Drafters	26	23	-11%	\$29.13

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13-1070	Human Resources Workers	Human Resources Workers	23	22	-4%	\$34.35
13-1050	Cost Estimators	Cost Estimators	23	21	-9%	\$34.77
51-4030	Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	23	20	-15%	\$20.52
49-1010	First-Line Supervisors of Mechanics, Installers, and Repairers	First-Line Supervisors of Mechanics, Installers, and Repairers	22	21	-5%	\$32.45
17-2140	Mechanical Engineers	Mechanical Engineers	21	20	-4%	\$47.22
47-2140	Painters and Paperhangers	Painters and Paperhangers	21	20	-4%	\$24.05
13-1160	Market Research Analysts and Marketing Specialists	Market Research Analysts and Marketing Specialists	20	23	12%	\$34.67
19-5010	Occupational Health and Safety Specialists and Technicians	Occupational Health and Safety Specialists and Technicians	19	19	-4%	\$34.89
13-1190	Miscellaneous Business Operations Specialists	Miscellaneous Business Operations Specialists	19	19	-1%	\$37.72
11-3030	Financial Managers	Financial Managers	18	19	8%	\$64.16
43-5030	Dispatchers	Dispatchers	16	15	-2%	\$21.42
41-3090	Miscellaneous Sales Representatives, Services	Miscellaneous Sales Representatives, Services	14	14	0%	\$29.23
29-2050	Health Practitioner Support Technologists and Technicians	Health Practitioner Support Technologists and Technicians	14	15	4%	\$18.34
33-9030	Security Guards and Gambling Surveillance Officers	Security Guards and Gambling Surveillance Officers	14	12	-12%	\$16.49
11-3070	Transportation, Storage, and Distribution Managers	Transportation, Storage, and Distribution Managers	13	14	5%	\$43.25

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35-1010	Supervisors of Food Preparation and Serving Workers	Supervisors of Food Preparation and Serving Workers	13	17	31%	\$21.36
51-6090	Miscellaneous Textile, Apparel, and Furnishings Workers	Miscellaneous Textile, Apparel, and Furnishings Workers	13	12	-4%	\$19.23
43-3050	Payroll and Timekeeping Clerks	Payroll and Timekeeping Clerks	12	15	25%	\$21.35
47-3010	Helpers, Construction Trades	Helpers, Construction Trades	11	9	-18%	\$18.88
15-1240	Database and Network Administrators and Architects	Database and Network Administrators and Architects	11	10	-6%	\$44.68
51-6030	Sewing Machine Operators	Sewing Machine Operators	11	10	-2%	\$18.22
11-9040	Architectural and Engineering Managers	Architectural and Engineering Managers	10	10	-4%	\$65.96
43-3020	Billing and Posting Clerks	Billing and Posting Clerks	10	9	-10%	\$19.04
11-1010	Chief Executives	Chief Executives	10	10	0%	\$70.70
53-5030	Ship Engineers	Ship Engineers	10	14	38%	\$35.39
39-2020	Animal Caretakers	Animal Caretakers	10	11	12%	\$16.41
35-2010	Cooks	Cooks	9	10	7%	\$16.15
29-1050	Pharmacists	Pharmacists	9	9	-1%	\$60.82
51-3010	Bakers	Bakers	9	9	-4%	\$16.19
43-4150	Order Clerks	Order Clerks	9	7	-17%	\$17.38
49-9020	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	9	8	-4%	\$25.74
33-3030	Fish and Game Wardens	Fish and Game Wardens	8	11	28%	\$29.56

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13-1150	Training and Development Specialists	Training and Development Specialists	8	8	-1%	\$30.66
17-2190	Miscellaneous Engineers	Miscellaneous Engineers	8	7	-4%	\$52.82
47-2060	Construction Laborers	Construction Laborers	8	7	-4%	\$21.38
47-2130	Insulation Workers	Insulation Workers	8	7	-4%	\$21.47
51-4070	Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic	Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic	8	7	-9%	\$23.21
53-7020	Crane and Tower Operators	Crane and Tower Operators	8	7	-4%	\$27.73
37-3010	Grounds Maintenance Workers	Grounds Maintenance Workers	7	8	14%	\$18.52
15-1230	Computer Support Specialists	Computer Support Specialists	7	7	-3%	\$26.31
39-2010	Animal Trainers	Animal Trainers	7	7	2%	\$17.02
15-1210	Computer and Information Analysts	Computer and Information Analysts	7	7	5%	\$40.55
19-4010	Agricultural and Food Science Technicians	Agricultural and Food Science Technicians	6	7	3%	\$21.81
51-9030	Cutting Workers	Cutting Workers	6	5	-12%	\$17.97
19-4020	Biological Technicians	Biological Technicians	6	7	28%	\$25.06
11-3010	Administrative Services and Facilities Managers	Administrative Services and Facilities Managers	6	6	0%	\$40.72
11-3020	Computer and Information Systems Managers	Computer and Information Systems Managers	6	6	7%	\$65.10
13-1040	Compliance Officers	Compliance Officers	6	5	0%	\$35.31
13-1110	Management Analysts	Management Analysts	6	6	0%	\$46.66
43-4170	Receptionists and Information Clerks	Receptionists and Information Clerks	6	5	-15%	\$16.17

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49-3040	Heavy Vehicle and Mobile Equipment Service Technicians and Mechanics	Heavy Vehicle and Mobile Equipment Service Technicians and Mechanics	5	5	0%	\$24.91
11-9020	Construction Managers	Construction Managers	5	5	5%	\$40.00
47-2220	Structural Iron and Steel Workers	Structural Iron and Steel Workers	5	5	-4%	\$24.47
51-9160	Computer Numerically Controlled Tool Operators and Programmers	Computer Numerically Controlled Tool Operators and Programmers	5	5	-11%	\$23.03
11-3120	Human Resources Managers	Human Resources Managers	5	5	0%	\$61.62
19-2090	Miscellaneous Physical Scientists	Miscellaneous Physical Scientists	5	8	75%	\$44.13
45-2010	Agricultural Inspectors	Agricultural Inspectors	5	6	23%	\$24.76
47-2070	Construction Equipment Operators	Construction Equipment Operators	5	5	-1%	\$23.34
15-1250	Software and Web Developers, Programmers, and Testers	Software and Web Developers, Programmers, and Testers	4	5	14%	\$44.59
51-8020	Stationary Engineers and Boiler Operators	Stationary Engineers and Boiler Operators	4	6	28%	\$26.20
11-3060	Purchasing Managers	Purchasing Managers	4	4	-1%	\$56.52
41-2020	Counter and Rental Clerks and Parts Salespersons	Counter and Rental Clerks and Parts Salespersons	4	4	-1%	\$18.38
43-3060	Procurement Clerks	Procurement Clerks	4	4	-11%	\$20.23
11-1030	Legislators	Legislators	4	5	24%	\$24.67
13-1120	Meeting, Convention, and Event Planners	Meeting, Convention, and Event Planners	4	6	52%	\$27.26
33-3040	Parking Enforcement Workers	Parking Enforcement Workers	4	3	-30%	\$20.22
51-9010	Chemical Processing Machine Setters, Operators, and Tenders	Chemical Processing Machine Setters, Operators, and Tenders	4	3	-2%	\$23.68

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45-2040	Graders and Sorters, Agricultural Products	Graders and Sorters, Agricultural Products	3	3	0%	\$15.76
43-5110	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	3	3	-6%	\$18.89
51-8090	Miscellaneous Plant and System Operators	Miscellaneous Plant and System Operators	3	3	3%	\$27.08
53-7010	Conveyor Operators and Tenders	Conveyor Operators and Tenders	3	3	5%	\$19.80
19-1010	Agricultural and Food Scientists	Agricultural and Food Scientists	3	3	-1%	\$32.78
13-1140	Compensation, Benefits, and Job Analysis Specialists	Compensation, Benefits, and Job Analysis Specialists	3	2	-4%	\$31.66
13-2030	Budget Analysts	Budget Analysts	3	2	-4%	\$38.08
17-2130	Materials Engineers	Materials Engineers	3	2	-4%	\$45.45
27-3040	Writers and Editors	Writers and Editors	3	2	-4%	\$30.11
33-2010	Firefighters	Firefighters	3	2	-4%	\$21.61
47-4010	Construction and Building Inspectors	Construction and Building Inspectors	3	2	-4%	\$30.95
51-2020	Electrical, Electronics, and Electromechanical Assemblers	Electrical, Electronics, and Electromechanical Assemblers	3	2	-4%	\$18.22
51-4110	Tool and Die Makers	Tool and Die Makers	3	2	-4%	\$29.15
51-7010	Cabinetmakers and Bench Carpenters	Cabinetmakers and Bench Carpenters	3	2	-4%	\$19.55
51-7040	Woodworking Machine Setters, Operators, and Tenders	Woodworking Machine Setters, Operators, and Tenders	3	2	-4%	\$17.65
49-3020	Automotive Technicians and Repairers	Automotive Technicians and Repairers	2	2	-6%	\$21.02
53-6030	Transportation Service Attendants	Transportation Service Attendants	2	2	0%	\$15.30

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17-3020	Engineering Technologists and Technicians, Except Drafters	Engineering Technologists and Technicians, Except Drafters	2	2	-7%	\$36.03
51-9040	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	2	2	-7%	\$18.94
11-9110	Medical and Health Services Managers	Medical and Health Services Managers	1	2	24%	\$48.66
11-9120	Natural Sciences Managers	Natural Sciences Managers	1	2	3%	\$62.90
13-2050	Financial Analysts and Advisors	Financial Analysts and Advisors	1	2	4%	\$48.98
15-1290	Miscellaneous Computer Occupations	Miscellaneous Computer Occupations	1	2	4%	\$37.89
19-1040	Medical Scientists	Medical Scientists	1	2	3%	\$65.16
19-2030	Chemists and Materials Scientists	Chemists and Materials Scientists	1	2	3%	\$35.16
19-4030	Chemical Technicians	Chemical Technicians	1	2	3%	\$26.39
27-2030	Dancers and Choreographers	Dancers and Choreographers	1	2	4%	\$25.16
41-9010	Models, Demonstrators, and Product Promoters	Models, Demonstrators, and Product Promoters	1	2	4%	\$25.08
43-3010	Bill and Account Collectors	Bill and Account Collectors	1	1	-7%	\$19.24
43-4160	Human Resources Assistants, Except Payroll and Timekeeping	Human Resources Assistants, Except Payroll and Timekeeping	1	1	-7%	\$20.46
43-9020	Data Entry and Information Processing Workers	Data Entry and Information Processing Workers	1	1	-28%	\$18.54
51-5110	Printing Workers	Printing Workers	1	2	4%	\$18.15
53-7070	Pumping Station Operators	Pumping Station Operators	1	2	4%	\$26.10
53-7120	Tank Car, Truck, and Ship Loaders	Tank Car, Truck, and Ship Loaders	1	2	4%	\$25.30

19-4090	Miscellaneous Life, Physical, and Social Science Technicians	Miscellaneous Life, Physical, and Social Science Technicians	1	1	-7%	\$27.79
51-6010	Laundry and Dry-Cleaning Workers	Laundry and Dry-Cleaning Workers	1	1	-7%	\$14.56
51-8030	Water and Wastewater Treatment Plant and System Operators	Water and Wastewater Treatment Plant and System Operators	1	1	-16%	\$23.92
31-9090	Miscellaneous Healthcare Support Occupations	Miscellaneous Healthcare Support Occupations	1	1	9%	\$18.96
43-5010	Cargo and Freight Agents	Cargo and Freight Agents	1	1	3%	\$27.66
35-9020	Dishwashers	Dishwashers	1	1	-5%	\$13.89
11-9140	Property, Real Estate, and Community Association Managers	Property, Real Estate, and Community Association Managers	1	1	5%	\$31.64
TOTAL	All Jobs AND	Weighted Hourly Avg. Earnings	11,778	12,869	9.3%	\$25.50

Table 21: All Periphery Sector Occupations (with greater than 0.1% of Employment in an Industry)

SOC	Description	MLR Description, As Applicable	2022 Jobs	2033 Jobs	Percent Change 2033	2021 Avg. Hourly Earnings
35-3023	Fast Food and Counter Workers	Fast Food and Counter Workers	5,541	5,953	7%	\$14.12
35-2010	Cooks	Cooks	4,059	4,762	17%	\$16.15
35-3031	Waiters and Waitresses	Waiters and Waitresses	3,350	3,668	9%	\$18.67
35-1011	Supervisors of Food Preparation and Serving Workers	Supervisors of Food Preparation and Serving Workers	1,937	2,243	16%	\$21.36
41-2010	Cashiers	Cashiers	1,228	1,131	-8%	\$14.08

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35-2021	Food Preparation Workers	Food Preparation Workers	957	1,003	5%	\$15.00
35-9021	Dishwashers	Dishwashers	636	697	10%	\$13.89
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	633	730	15%	\$15.00
53-3030	Driver/Sales Workers and Truck Drivers	Driver/Sales Workers and Truck Drivers	536	647	21%	\$22.07
35-3011	Bartenders	Bartenders	470	568	21%	\$19.94
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	Dining Room and Cafeteria Attendants and Bartender Helpers	449	542	21%	\$13.96
53-7060	Laborers and Material Movers	Laborers and Material Movers	428	445	4%	\$16.21
11-9051	Food Service Managers	Food Service Managers	347	407	17%	\$24.67
11-1020	General and Operations Managers	General and Operations Managers	289	332	15%	\$47.62
51-3011	Bakers	Bakers	112	122	9%	\$16.19
41-1011	First-Line Supervisors of Sales Workers	First-Line Supervisors of Sales Workers	110	109	-1%	\$27.60
35-9099	Miscellaneous Food Preparation and Serving Related Workers	Miscellaneous Food Preparation and Serving Related Workers	102	120	17%	\$14.68
43-4051	Customer Service Representatives	Customer Service Representatives	83	75	-10%	\$18.52
41-2031	Retail Salespersons	Retail Salespersons	82	82	1%	\$16.65
37-2010	Building Cleaning Workers	Building Cleaning Workers	76	86	13%	\$16.74
51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	Butchers and Other Meat, Poultry, and Fish Processing Workers	75	71	-5%	\$16.57

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43-9061	Office Clerks, General	Office Clerks, General	51	52	2%	\$18.65
43-3031	Bill and Account Collectors	Bill and Account Collectors	49	51	3%	\$19.24
49-9071	Maintenance and Repair Workers, General	Maintenance and Repair Workers, General	44	51	15%	\$21.24
13-1151	Training and Development Specialists	Training and Development Specialists	42	48	13%	\$30.66
35-3041	Food Servers, Nonrestaurant	Food Servers, Nonrestaurant	41	47	15%	\$14.72
53-1047	First-Line Supervisors of Transportation and Material Moving Workers	First-Line Supervisors of Transportation and Material Moving Workers	28	27	-5%	\$26.52
51-3090	Miscellaneous Food Processing Workers	Miscellaneous Food Processing Workers	27	29	8%	\$16.89
29-2050	Health Practitioner Support Technologists and Technicians	Health Practitioner Support Technologists and Technicians	23	24	2%	\$18.34
33-9030	Security Guards and Gambling Surveillance Officers	Security Guards and Gambling Surveillance Officers	22	24	9%	\$16.49
43-6014	Secretaries and Administrative Assistants	Secretaries and Administrative Assistants	22	22	-1%	\$20.69
13-1161	Market Research Analysts and Marketing Specialists	Market Research Analysts and Marketing Specialists	20	26	29%	\$34.67
41-9090	Miscellaneous Sales and Related Workers	Miscellaneous Sales and Related Workers	18	17	-5%	\$18.31
43-5071	Shipping, Receiving, and Inventory Clerks	Shipping, Receiving, and Inventory Clerks	17	14	-15%	\$19.29
29-1051	Pharmacists	Pharmacists	13	12	-10%	\$60.82
51-1011	First-Line Supervisors of Production and Operating Workers	First-Line Supervisors of Production and Operating Workers	13	13	-5%	\$32.79

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43-1011	First-Line Supervisors of Office and Administrative Support Workers	First-Line Supervisors of Office and Administrative Support Workers	12	10	-15%	\$27.55
27-1020	Designers	Designers	5	5	-9%	\$26.61
11-2020	Marketing and Sales Managers	Marketing and Sales Managers	3	3	-5%	\$56.54
13-1020	Buyers and Purchasing Agents	Buyers and Purchasing Agents	3	3	-15%	\$33.09
53-6030	Transportation Service Attendants	Transportation Service Attendants	3	3	-5%	\$15.30
13-1070	Human Resources Workers	Human Resources Workers	2	2	-7%	\$34.35
13-1199	Miscellaneous Business Operations Specialists	Miscellaneous Business Operations Specialists	2	2	-5%	\$37.72
31-9090	Miscellaneous Healthcare Support Occupations	Miscellaneous Healthcare Support Occupations	2	1	-10%	\$18.96
41-2020	Counter and Rental Clerks and Parts Salespersons	Counter and Rental Clerks and Parts Salespersons	2	2	-5%	\$18.38
41-9010	Models, Demonstrators, and Product Promoters	Models, Demonstrators, and Product Promoters	2	2	-5%	\$25.08
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	2	1	-15%	\$18.89
45-2090	Miscellaneous Agricultural Workers	Miscellaneous Agricultural Workers	2	2	-10%	\$15.49
TOTAL	All Jobs AND	Weighted Average Hourly Earnings	21,968	24,281	10.5%	\$21.37

APPENDIX II: SUPPLEMENTAL EDUCATION TABLES, KEY INDUSTRY OCCUPATIONS

Table 1: Employment, On-The-Job Training, Education Level, and Experience Requirements for Core Occupations

SOC Code	Description	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
11-9013	Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	5 years or more	None
11-9041	Architectural and Engineering Managers	Bachelor's degree	5 years or more	None
13-1028	Buyers and Purchasing Agents	Bachelor's degree	None	Moderate-term on-the-job training
19-4099	Life, Physical, and Social Science Technicians, All Other	Associate's degree	None	None
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	Less than 5 years	None
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	No formal educational credential	None	Short-term on-the-job training
45-3031	Fishing and Hunting Workers	No formal educational credential	None	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	Less than 5 years	None
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	No formal educational credential	None	Short-term on-the-job training
53-7199	Material Moving Workers, All Other	No formal educational credential	None	Short-term on-the-job training

Table 22: Employment, On-The-Job Training, Education Level, and Experience Requirements for Supporting Occupations

SOC	Description	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
11-1011	Chief Executives	Bachelor's degree	5 years or more	None
11-2011	Advertising and Promotions Managers	Bachelor's degree	Less than 5 years	None
11-2021	Marketing Managers	Bachelor's degree	5 years or more	None
11-2032	Public Relations Managers	Bachelor's degree	5 years or more	None
11-3013	Facilities Managers	Bachelor's degree	Less than 5 years	None
11-3031	Financial Managers	Bachelor's degree	5 years or more	None
11-3051	Industrial Production Managers	Bachelor's degree	5 years or more	None
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	5 years or more	None
13-1041	Compliance Officers	Bachelor's degree	None	Moderate-term on-the-job training
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	None	None
13-2051	Financial and Investment Analysts	Bachelor's degree	None	None
17-2121	Marine Engineers and Naval Architects	Bachelor's degree	None	None
17-3027	Mechanical Engineering Technologists and Technicians	Associate's degree	None	None
19-1011	Animal Scientists	Bachelor's degree	None	None
19-1012	Food Scientists and Technologists	Bachelor's degree	None	None
19-1022	Microbiologists	Bachelor's degree	None	None

19-1023	Zoologists and Wildlife Biologists	Bachelor's degree	None	None
19-1029	Biological Scientists, All Other	Bachelor's degree	None	None
19-1031	Conservation Scientists	Bachelor's degree	None	None
19-1041	Epidemiologists	Master's degree	None	None
19-1042	Medical Scientists, Except Epidemiologists	Doctoral or professional degree	None	None
19-2041	Environmental Scientists and Specialists, Including Health	Bachelor's degree	None	None
19-2042	Geoscientists, Except Hydrologists and Geographers	Bachelor's degree	None	None
19-4012	Agricultural Technicians	Associate's degree	None	Moderate-term on-the-job training
19-4021	Biological Technicians	Bachelor's degree	None	None
19-4031	Chemical Technicians	Associate's degree	None	Moderate-term on-the-job training
19-4043	Geological Technicians, Except Hydrologic Technicians	Associate's degree	None	Moderate-term on-the-job training
23-1011	Lawyers	Doctoral or professional degree	None	None
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	Doctoral or professional degree	5 years or more	Short-term on-the-job training
25-1099	Postsecondary Teachers	Doctoral or professional degree	None	None
25-2012	Kindergarten Teachers, Except Special Education	Bachelor's degree	None	None
25-2021	Elementary School Teachers, Except Special Education	Bachelor's degree	None	None
25-2022	Middle School Teachers, Except Special and Career/Technical Education	Bachelor's degree	None	None
25-2023	Career/Technical Education Teachers, Middle School	Bachelor's degree	Less than 5 years	None

25-2031	Secondary School Teachers, Except Special and Career/Technical Education	Bachelor's degree	None	None
25-2032	Career/Technical Education Teachers, Secondary School	Bachelor's degree	Less than 5 years	None
25-2052	Special Education Teachers, Kindergarten and Elementary School	Bachelor's degree	None	None
25-2057	Special Education Teachers, Middle School	Bachelor's degree	None	None
25-2058	Special Education Teachers, Secondary School	Bachelor's degree	None	None
25-3011	Adult Basic Education, Adult Secondary Education, and English as a Second Language Instructors	Bachelor's degree	None	None
27-3023	News Analysts, Reporters, and Journalists	Bachelor's degree	None	None
27-3031	Public Relations Specialists	Bachelor's degree	None	None
27-3043	Writers and Authors	Bachelor's degree	None	Long-term on-the-job training
29-1031	Dietitians and Nutritionists	Bachelor's degree	None	Internship/residency
29-1229	Physicians, All Other	Doctoral or professional degree	None	Internship/residency
33-3031	Fish and Game Wardens	Bachelor's degree	None	Moderate-term on-the-job training
41-2031	Retail Salespersons	No formal educational credential	None	Short-term on-the-job training
43-3031	Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	None	Moderate-term on-the-job training
47-2111	Electricians	High school diploma or equivalent	None	Apprenticeship
49-3051	Motorboat Mechanics and Service Technicians	High school diploma or equivalent	None	Long-term on-the-job training
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Postsecondary nondegree award	None	Long-term on-the-job training

49-9043	Maintenance Workers, Machinery	High school diploma or equivalent	None	Long-term on-the-job training
51-4041	Machinists	High school diploma or equivalent	None	Long-term on-the-job training
51-9193	Cooling and Freezing Equipment Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	High school diploma or equivalent	Less than 5 years	None
53-3031	Driver/Sales Workers	High school diploma or equivalent	None	Short-term on-the-job training
53-3032	Heavy and Tractor-Trailer Truck Drivers	Postsecondary nondegree award	None	Short-term on-the-job training
53-7065	Stockers and Order Fillers	High school diploma or equivalent	None	Short-term on-the-job training
53-7081	Refuse and Recyclable Material Collectors	No formal educational credential	None	Short-term on-the-job training

APPENDIX III: SURVEY SUMMARY

Which of the following best describes the organization you represent?

Organization Type	Count	Percent
Private sector employer	27	60%
Public sector employer	2	4%
Other:	16	36%
Grand Total	45	100%

Which of the following best describes your role with the organization (select all that apply)?

Organization Role	Count	Percent
Executive leadership	29	64%
Human resources representative	5	11%
Training supervisor	7	16%
Hiring manager	7	16%
Operations supervisor	8	18%
Other	16	36%
Grand Total	45	

How many full-time employees work for your organization?

Number of employees	Count	Percent
1 to 9	22	52%
10 to 19	4	10%
20 to 29	2	5%
30 to 39	1	2%
40 to 49	1	2%
None	12	29%
Grand Total	42	

How many of the full-time employees indicated above are considered seasonal?

Number of employees	Count	Percent
1 to 9	17	57%
10 to 19	2	7%
20 to 29	1	3%
None	10	33%
Grand Total	30	100%

How many part-time employees work for your organization?

Number of employees	Count	Percent
1 to 9	20	48%
10 to 19	1	2%
20 to 29	1	2%
None	20	48%
Grand Total	42	1

How many of the part-time employees indicated above are considered seasonal?

Number of employees	Count	Percent
1 to 9	15	71%
10 to 19	1	5%
20 to 29	1	5%
None	4	19%
Grand Total	21	100%

Do your organization contract with any 1099/non-payroll employees?

Response	Count	Percentage
Yes	18	44%
No	21	51%
Not sure	2	5%
Grand Total	41	100%

Which of the following job descriptions describe the roles your organization is seeking to fill in the next year (select all that apply)?

Marine Living Resource Economy Sector	Count	Percent
Aquaculture production and harvest	5	33%
Commercial fishing production and harvest	4	27%
Processing and distribution	4	27%
Sales and marketing	5	33%
Innovation, engineering, and science	3	20%
Industry support services and technical assistance	2	13%
Grand Total	15	

What challenges, if any, has your organization dealt with in the past year when it comes to hiring new employees (select all that apply)?

Hiring Challenge	Count	Percent
Shortage of initial applicants, qualified or not	13	37%
Shortage of qualified initial applicants	9	26%
Enough initial candidates with relevant skills, but not enough candidates passing the screening interview	2	6%
Not enough finalist candidates can successfully complete the interview process	1	3%
Not enough candidates offered employment accept the position	3	9%
Not enough candidates who have accepted employment successfully complete the onboarding process.	0	0%
Our organization faces no challenges in hiring new employees	14	40%
Grand Total	35	

Which of the following best describes your organization's recruitment plan/strategy for identifying and hiring Black, Indigenous, and People of Color (BIPOC) workers?

Recruitment Plan/Strategy Description	Count	Percent
Our organization does not currently have a recruitment strategy for these workers in place and has no immediate plans to develop one	17	59%
Our organization does not currently have a recruitment strategy for these workers in place, but would like to and are not sure where to begin	1	3%
Our organization has a recruitment strategy for these workers already in place and in use	8	28%
Our organization has a recruitment strategy for these workers developed, but not yet fully deployed/executed	1	3%
Our organization is currently, actively working on updating/developing a recruitment strategy for these workers	2	7%
Grand Total	29	1

Which of the following best describes your organization's recruitment plan/strategy for identifying and hiring older adult (55+) workers?

Recruitment Plan/Strategy Description	Count	Percent
Our organization does not currently have a recruitment strategy for these workers in place and has no immediate plans to develop one	17	57%
Our organization does not currently have a recruitment strategy for these workers in place, but would like to and are not sure where to begin	4	13%
Our organization has a recruitment strategy for these workers already in place and in use	8	27%
Our organization has just begun updating/developing a recruitment strategy for these workers	1	3%
Grand Total	30	100%

Which of the following best describes your organization's recruitment plan/strategy for identifying and hiring immigrant workers?

Recruitment Plan/Strategy Description	Count	Percent
Our organization does not currently have a recruitment strategy for these workers in place and has no immediate plans to develop one	18	62%
Our organization does not currently have a recruitment strategy for these workers in place, but would like to and are not sure where to begin	3	10%
Our organization has a recruitment strategy for these workers already in place and in use	5	17%
Our organization has just begun updating/developing a recruitment strategy for these workers	2	7%
Our organization is currently, actively working on updating/developing a recruitment strategy for these workers	1	3%
Grand Total	29	100%

Which of the following best describes your organization's recruitment plan/strategy for identifying and hiring workers with disabilities?

Recruitment Plan/Strategy Description	Count	Percent
Our organization does not currently have a recruitment strategy for these workers in place and has no immediate plans to develop one	22	73%
Our organization does not currently have a recruitment strategy for these workers in place, but would like to and are not sure where to begin	1	3%
Our organization has a recruitment strategy for these workers already in place and in use	5	17%
Our organization has just begun updating/developing a recruitment strategy for these workers	2	7%
Grand Total	30	100%

When selecting new employees, what credentials and certifications do you look for when screening candidates?

Respondents provided open-ended text responses to the question. These responses were grouped thematically. The results of those groupings are below.

Response	Count	Percent
Sobriety/drug test	5	20%
Experience	5	20%
Work ethic	4	16%
Punctuality	2	8%
Driver's license	2	8%
Character	2	8%
Work outside in a range of conditions	1	4%
Teamwork	1	4%
Aquaculture knowledge	1	4%
Communication skills	1	4%
Can't generalize	1	4%
Transportation	1	4%
Scientific college degree	1	4%
Certifications/coursework in aquaculture	1	4%
Servsafe	1	4%
Work skills	1	4%
dependable	1	4%

From what regional training programs has our organization hired graduates from in the past year?

Program	Count	Percent
None or N/A	17	81%
Husson University	1	5%
We have hired employees from U Maine. In 2022 we hosted interns from the Aquaculture Pioneers program and will host another in 2023.	1	5%
We hire seasonal interns and farm hands on a 1099 basis only. We have identified interns and farm hands from two programs (1) Aquaculture Pioneers at Educate Maine, and (2) University of Maine School of Food & Agriculture (specifically via Prof Tim Bowden and the Introduction to Aquaculture course he runs). We have also hired through referrals from colleagues in our professional networks and via word of mouth	1	5%

Following initial onboarding, which of the following in-house training activities does your organization provide for new employees (select all that apply)?

In-house training activity	Count	Percent
Safety and emergency response-related training	16	67%
Hands-on training for specific job functions	23	96%
Structured, multi-lesson training program with supervisory staff	3	13%
Job shadowing, formal/informal apprenticeship under the stewardship of a more tenured employee	12	50%
Classroom training and instruction	2	8%
Self-guided training classes, completed on a computer/handheld device	5	21%
Grand Total	24	

When training new employees for basic job functions and responsibilities, does your organization contract with any outside training providers?

Response	Count	Percent
Yes	1	4%
No	1	4%
Not Sure	26	93%
Grand Total	28	100%

From which outside training providers does your organization contract with?

Only respondents who answered yes to the previous question saw this question.

Response	Count	Percent
Safety training	1	100%

With regard to ongoing employee training, what credentials/certifications does your organization require/assist employees with attaining?

8 respondents answered that they do not require/assist employees with attaining any credentials/certifications.

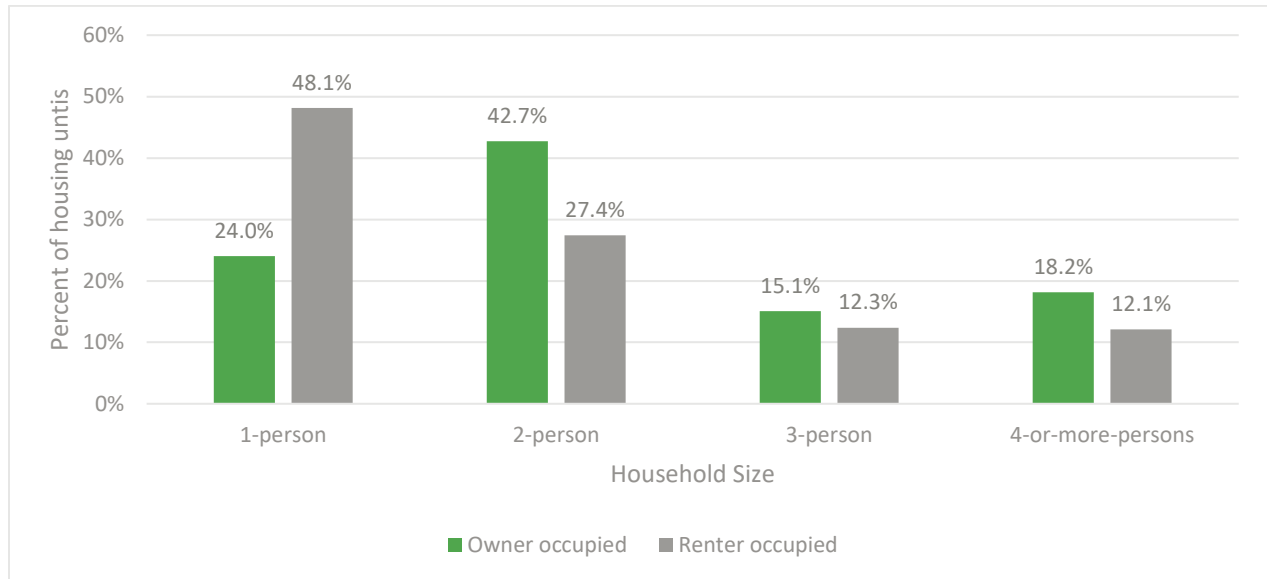
Response	Count
UMaine training (DEI, safety, COI, etc.)	1
HACCP	1
Boaters Safety	1
Online management and communications courses	1
NMFS Licensing	1
ServSafe Food Handling Certification	1
Water Safety Training	1
Free, online boat education course	1

When it comes to employee development and training, what training providers does your organization contract with?

Response	Count	Percent
N/A or none	11	69%
Brightspace?	1	6%
Hard Knocks of Georges Bank	1	6%
MEP	1	6%
Not sure	1	6%
UMAINE, Cornell, US coast guard, Coursera	1	6%
Grand Total	16	

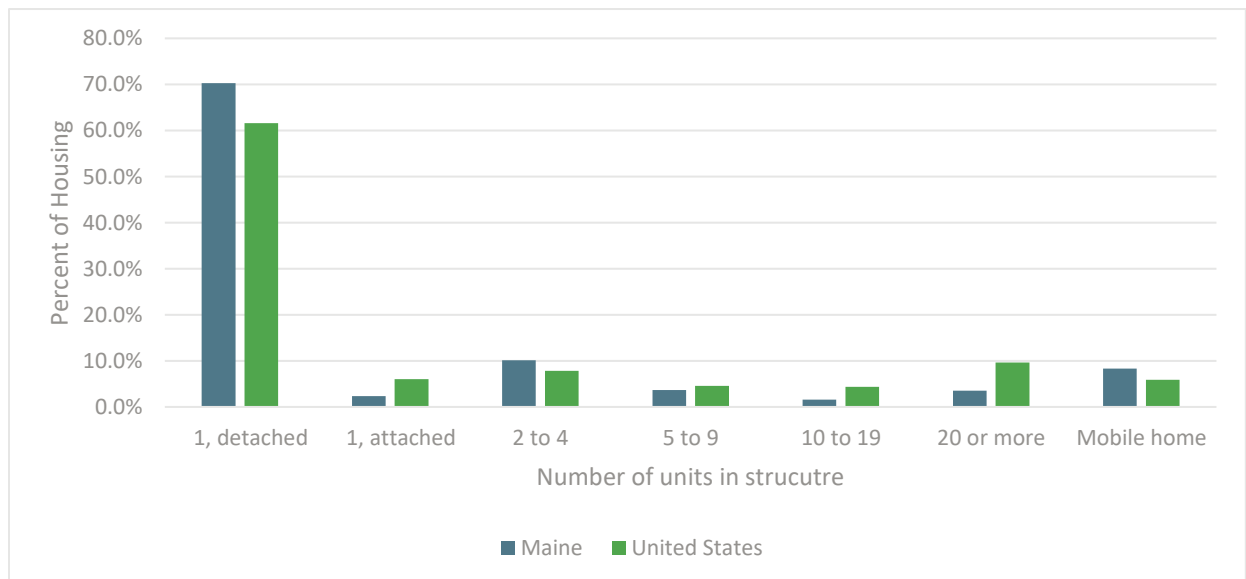
APPENDIX IV: SUPPLEMENTAL HOUSING ANALYSIS FIGURES

Figure 40: Maine Households by Tenure Size.



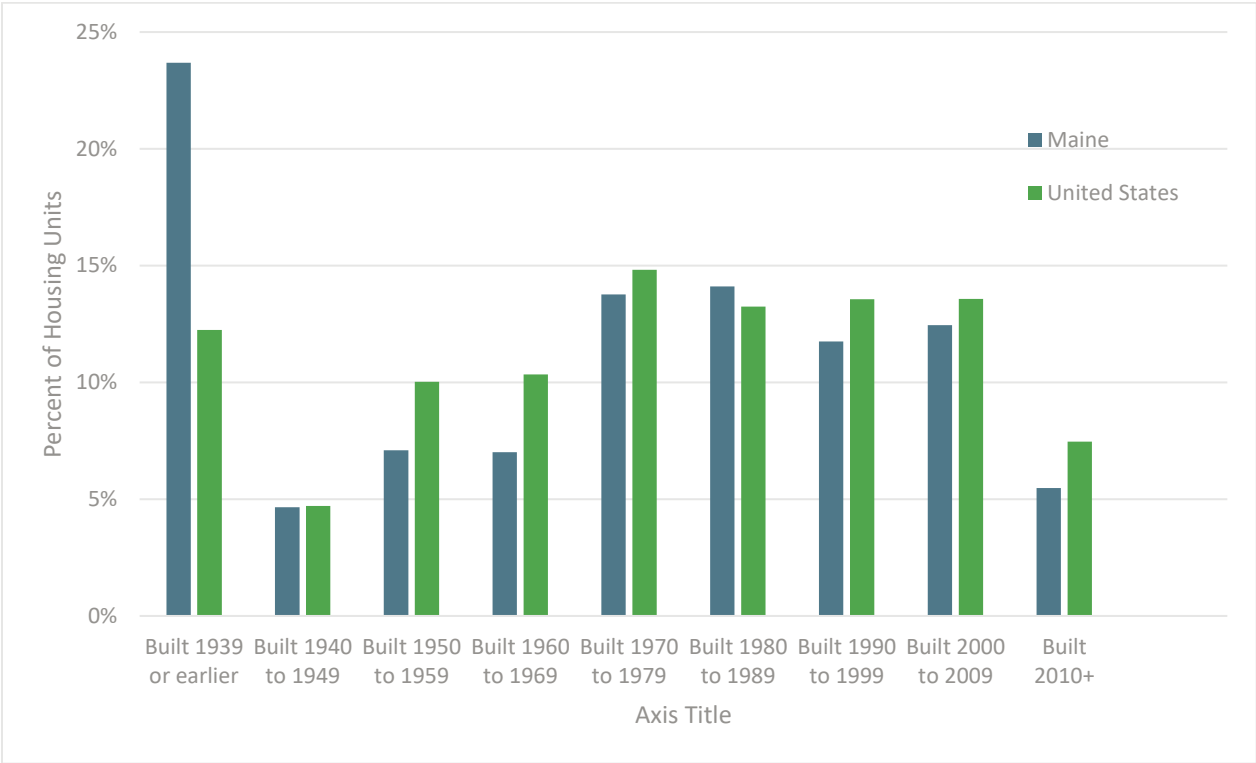
Source: 2021 American Community Survey 5-Year Estimates.

Figure 41: Housing stock by number of units in structure.



Source: 2021 American Community Survey 5-Year Estimates.

Figure 42: Total Housing Stock by Year Built.



Source: 2021 American Community Survey 5-Year Estimates.

APPENDIX V: CORPORATE EQUALITY INDEX, SCORING & SELF-ASSESSMENT TOOL²⁶

Criteria 1: Workforce Protections (30 points possible)

- a. Policy includes sexual orientation for all operations (15 points)
- b. Policy includes gender identity or expression for all operations (15 points)

Criteria 2: Inclusive Benefits (30 points possible)

To secure full credit for benefits criteria, each benefit must be available to all benefits-eligible U.S. employees. In areas where more than one health insurance plan is available, at least one inclusive plan must be available.

- a. Equivalency in same- and different-sex spousal medical and soft benefits (10 points)
- b. Equivalency in same- and different-sex domestic partner medical and soft benefits (10 points)
- c. Equal health coverage for transgender individuals without exclusion for medically necessary care (10 points):

- Insurance contract explicitly affirms coverage and contains no blanket exclusions for coverage
- Insurance contract and/or policy documentation is based on the World Professional Association for Transgender Health (WPATH) Standards of Care
- Plan documentation must be readily available to employees and must clearly communicate inclusive insurance options to employees and their eligible dependents.
- Other benefits available for other medical conditions are also available to transgender individuals. Specifically, where available for employees, the following benefits should all extend to transgender individuals, including for transition-related services:

- Short term medical leave
- Mental health benefits
- Pharmaceutical coverage (e.g., for hormone replacement therapies)
- Coverage for medical visits or laboratory services
- Coverage for reconstructive surgical procedures related to sex reassignment

Criteria 3: Supporting an Inclusive Culture & Corporate Social Responsibility (40 points possible)

- a. Three LGBTQ+ Internal Training and Education Best Practices Businesses must demonstrate a firm-wide, sustained and accountable commitment to diversity and cultural competency, including at least three of the following elements (10 points):

²⁶ The Corporate Equality Index, 2022 report, including methodology and the herein referenced scoring criteria can be found at: https://reports.hrc.org/corporate-equality-index-2022?_ga=2.31858494.1618424107.1678889900-1309780240.1678889900#spotlight-equality-public-square

1. New hire training clearly states that the nondiscrimination policy includes gender identity and sexual orientation and provides definitions or scenarios illustrating the policy for each
2. Supervisors undergo training that includes gender identity and sexual orientation as discrete topics (maybe part of a broader training) and provides definitions or scenarios illustrating the policy for each
3. Integration of gender identity and sexual orientation in professional development, skills-based or other leadership training that includes elements of diversity and/or cultural competency
4. Gender transition guidelines with supportive restroom, dress code and documentation guidance
5. Anonymous employee engagement or climate surveys conducted on an annual or biennial basis allow employees the option to identify as LGBTQ+.
6. Data collection forms that include employee race, ethnicity, gender, military and disability status — typically recorded as part of employee records — include optional questions on sexual orientation and gender identity.
7. Senior management/executive performance measures include LGBTQ+ diversity metrics

b. Employee group –or– Diversity council (10 points)

c. Three Distinct Efforts of Outreach or Engagement to Broader LGBTQ+ Community | Businesses must demonstrate ongoing LGBTQ+ specific engagement that extends across the firm, including at least three of the following (15 points):

1. LGBTQ+ employee recruitment efforts with demonstrated reach of LGBTQ+ applicants (required documentation may include a short summary of the event or an estimation of the number of candidates reached)
2. Supplier diversity program with demonstrated effort to include certified LGBTQ+ suppliers
3. Marketing or advertising to LGBTQ+ consumers (e.g.: advertising with LGBTQ+ content, advertising in LGBTQ+ media or sponsoring LGBTQ+ organizations and events)
4. Philanthropic support of at least one LGBTQ+ organization or event (e.g.: financial, in kind or pro bono support)
5. Demonstrated public support for LGBTQ+ equality under the law through local, state or federal legislation or initiatives

d. LGBTQ+ Corporate Social Responsibility, Contractor/supplier non-discrimination standards AND Philanthropic Giving Guidelines (5 points)

Criteria 4: Responsible citizenship (-25)

Employers will have 25 points deducted from their score for a large-scale official or public anti-LGBTQ+ blemish on their recent records. Scores on this criterion are based on information that has come to HRC's attention related to topics including but not limited to: undue influence by a significant shareholder calculated to undermine a business's employment policies or

practices related to its LGBTQ+ employees; directing corporate charitable contributions to organizations whose primary mission includes advocacy against LGBTQ+ equality; opposing shareholder resolutions reasonably aimed at encouraging the adoption of inclusive workplace policies; revoking inclusive LGBTQ+ policies or practices; or engaging in proven practices that are contrary to the business's written LGBTQ+ employment policies.

Perfect Score: 100 points