



Economic Contribution of Coastal Maine Botanical Gardens

2022

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Objective and Report Structure

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A. Executive Summary

CMBG contributed significant economic value to the Maine and Lincoln County economies in 2021.

The Coastal Maine Botanical Gardens (CMBG) operations in the Boothbay region continue to drive significant economic value to the state's economy in terms of total economic output, earnings, and jobs.

In 2021, the total economic contribution of CMBG in the Maine economy is estimated at \$41.9 million in business output, \$15.2 million in total earnings, and 490 total jobs. Within Lincoln County alone, CMBG supported \$24.5 million in business output, \$8.8 million in total earnings, and 310 total jobs.

The largest component of this economic contribution came from the regional spending of CMBG's 336,000 visitors – the most visitors the Gardens has had in a single year since opening in 2007 – who spent an estimated \$15 million in the Maine economy.

CMBG's operating and capital expenses also rose to record levels in 2021, as the organization rebounded from the impact of the pandemic on its operations and visitation. The Gardens paid Maine-based vendors located in 51 Maine communities a total of \$1.5 million. CMBG employees hailed from 40 Maine towns and collectively earned \$3.4 million in salaries.

B. Total Economic Contribution - Maine

In 2021, CMBG supported \$15.2M in earnings and 490 jobs in the Maine economy.

In 2021, Coastal Maine Botanical Gardens spent \$7.9M on operations and capital expenditures. As one of the state's top attractions, CMBG attracted 336,400 visitors who, in addition to spending at the Gardens, spent an estimated \$15.2M in the Maine economy. This direct contribution of \$23.1M in spending included \$8.8M in salaries and supported 300 jobs across the state.

As this direct spending rippled through the Maine's economy, an additional \$18.8M in indirect and induced spending by suppliers, employees, and visitors was generated, including an additional \$6.4M in wages across 190 Maine jobs.

In total, CMBG supported an estimated \$41.9 million in business output, \$15.2 million in earnings, and 490 jobs in the Maine economy in 2021.

Figure 1: CMBG 2021 Maine Economic Contribution Summary

	Output Spending	Earnings	Jobs
Operations and Capital	\$7.9M	\$3.9M	130
Visitors	\$15.2M	\$5.0M	170
Direct Contribution	\$23.1M	\$8.8M	300
Indirect & Induced Contribution	\$18.8M	\$6.4M	190
Total Contribution	\$41.9M	\$15.2M	490
Multiplier (average)	1.8	0.7	21.1

B. Total Economic Contribution – Lincoln County

In Lincoln County, CMBG supported \$8.8M in earnings and 310 jobs in 2021.

The majority of CMBG’s economic contribution was in Lincoln County.

Visitor spending was concentrated within Lincoln County, accounting for an estimated 73% of direct visitor spending (\$11.4M), 87% of earnings related to visitation (\$4.3M), and 71% of jobs related to visitation (120).

Indirect spending by the Garden’s supply chain and induced spending by employees galvanized an additional \$5.5M in output, \$629K in wages, and 60 jobs across Lincoln County.

In total, CMBG supported \$24.5M in output (58%), \$8.8M in earnings (58%), and 310 jobs (64%) within Lincoln County.

The Garden’s additional economic contribution of \$17.4M in output, \$6.4M in earnings, and 180 jobs were dispersed across the state.

Figure 2: CMBG 2021 Economic Contribution Regional Split

	Output Spending	Earnings	Jobs
Operations and Capital	\$7.9M	\$3.9M	130
Visitors	\$15.2M	\$5.0M	170
Lincoln County	\$11.1M	\$4.3M	120
Maine, Non-Lincoln County	\$4.1M	\$629K	50
Direct Contribution	\$23.1M	\$8.8M	300
Indirect & Induced Contribution	\$18.8M	\$6.4M	190
Lincoln County	\$5.5M	\$629K	60
Maine, Non-Lincoln County	\$13.3M	\$5.7M	130
Total Contribution	\$41.9M	\$15.2M	490
Lincoln County	\$24.5M	\$8.8M	310
Maine, Non-Lincoln County	\$17.4M	\$6.4M	180

C. Economic Contribution of Visitors

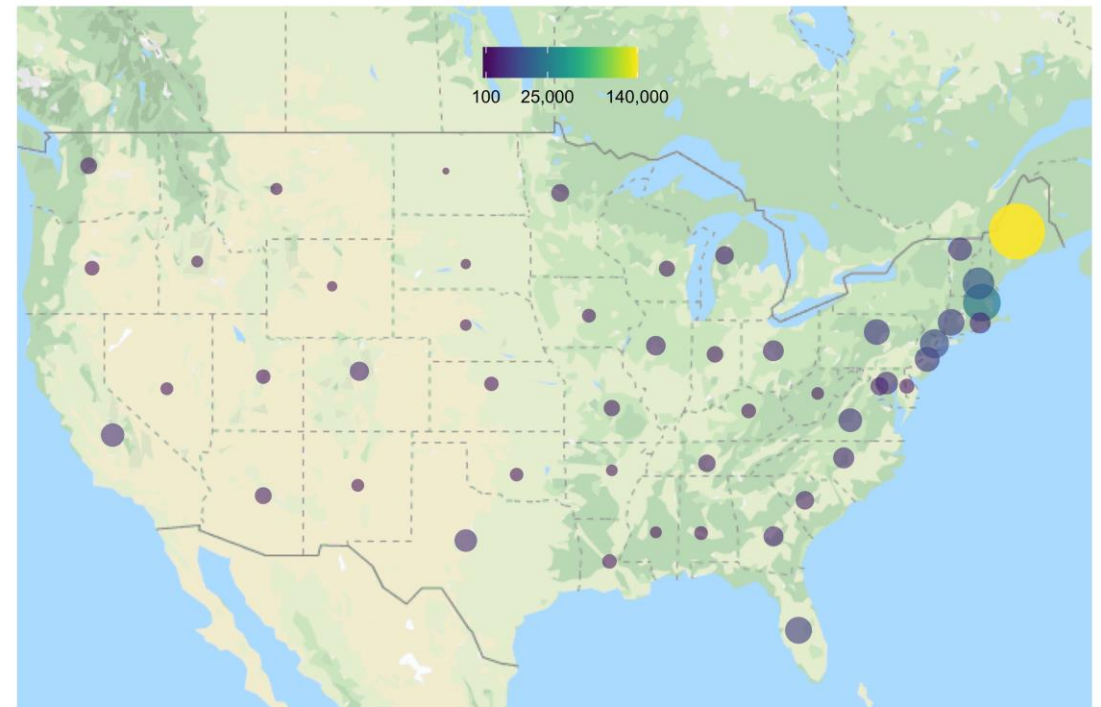
CMBG's 336,400 visitors in 2021 spent \$15.2M and supported \$5.0M in earnings and 170 jobs in Maine.

The largest component of CMBG's economic contribution came from the regional spending of their visitors. In 2021, 336,400 people visited the Gardens, the most visitors the Garden has ever had in a single year since opening in 2007, and spent an estimated \$15.2M in the Maine economy.

Visitors came all 50 U.S. states, including Hawaii, Alaska, and from Puerto Rico, and Guam. Roughly three-quarters of visitors were from Maine and one-quarter hailed from outside of Maine. (For the purpose of the economic modeling, Maine-based visitors and CMBG members are considered day-visitors; visitors from outside of Maine are assumed to have stayed overnight.)

In addition to spending at CMBG, itself, visitors spent an estimated \$5.8M at Maine restaurants, \$3.1M on lodging, \$2.0M at retail stores, and \$1.2M on other recreational activities. In total, the \$15.2M of direct visitor spending contributed to earnings and jobs in the Maine economy across a multitude of sectors.

Figure 3: CMBG Visitors, 2021



D. Economic Contribution Over Time

Over the past eight years, CMBG's total revenue has doubled and visitation has tripled.

CMBG has grown significantly since 2014, with much of that growth experienced since 2019. Operational revenue has more than doubled since 2019 (+111%) and increased steadily even through the pandemic. The number of visitors to the Gardens has tripled since 2014 and, despite a pandemic-related dip, increased 50% since 2019.

Figure 4a: CMBG Total Revenue, 2014 – 2021

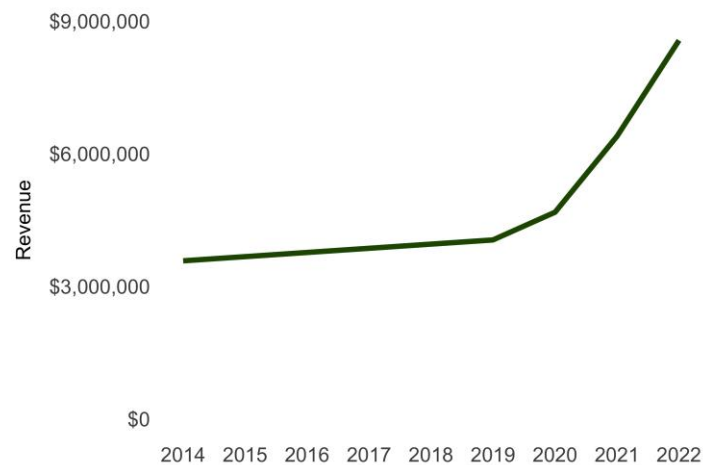
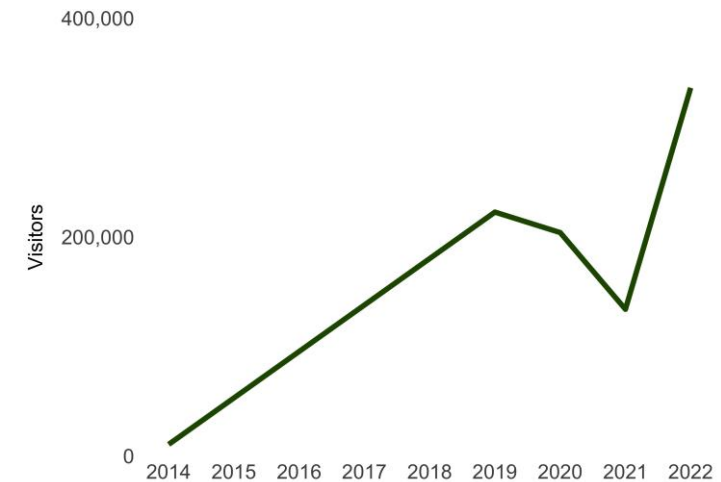


Figure 4b: CMBG Visitor Count, 2014 – 2021



E. Spotlight on Employees

In 2021, CMBG employees hailed from 40 towns across Maine and collectively earned \$3.4M.

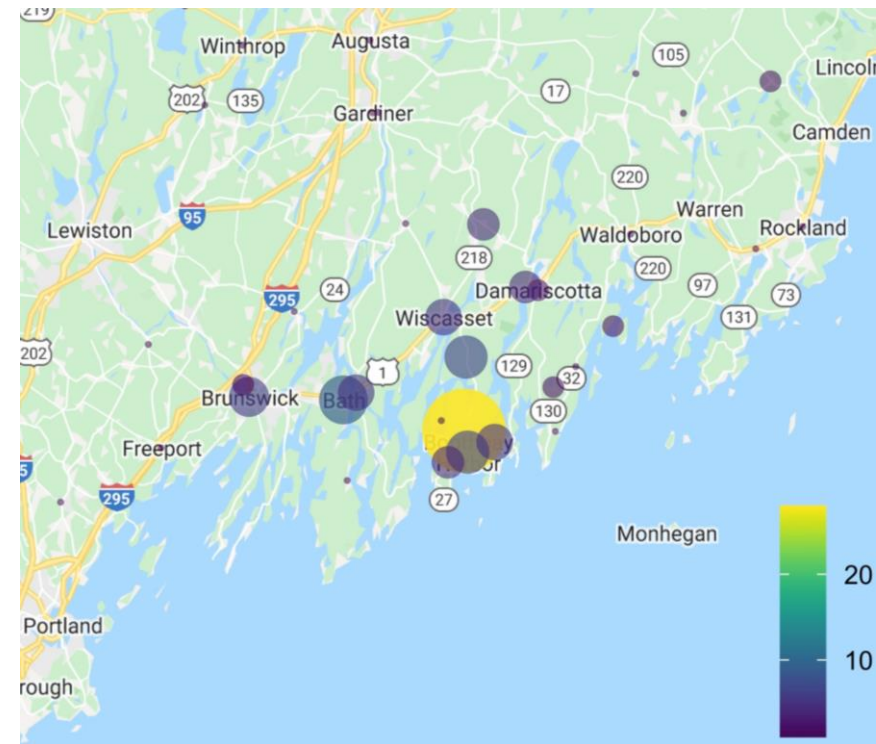
Key Points

In 2021, CMBG paid salaries to employees from 40 Maine towns in 8 counties, with the majority of employees living in Lincoln County (58%), in and around Boothbay. Collectively, CMBG employees earned \$3.4M in 2021 and the average salary for a full-time, non-executive employee was \$39,000, about the average for all workers in Lincoln County.

The average employee has been with CMBG for 5.5 years. Since 2021, approximately 40 people have moved to the Boothbay region from outside the region to work at the Gardens.

Looking ahead, as a result of a comprehensive review of compensation, in April 2022 CMBG increased the average salary for a full-time, non-executive to \$58,700. This increase added \$550K to CMBG's total payroll and many staff received raises and/or changes in their titles and job descriptions.

Figure 5: CMBG Employees, 2021



CMBG employees spanned 40 towns in 2021 which are not all depicted in the map above.

F. Spotlight on Vendors

CMBG paid 160 local Maine vendors \$1.5 million in 2021.

Key Points

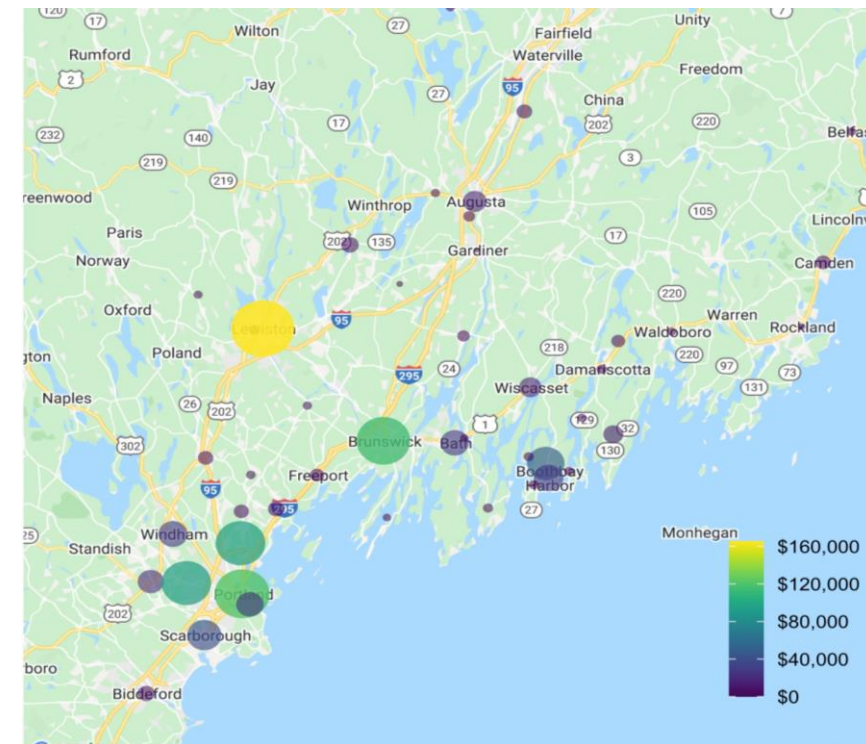
In 2021, CMBG paid 160 Maine-based vendors \$1.5 million dollars to support the Garden's operations and capital projects.

The network of CMBG vendors spanned 51 communities across the state from Portland to Mount Desert. Together, they covered 13 of Maine's 16 counties.

Of the 160 total Maine-based vendors, 47 companies were located in Lincoln County.

\$115K or 8% of CMBG's 2021 spending with Maine vendors went to companies based in Lincoln County.

Figure 6: CMBG Maine Vendors, 2021



CMBG vendors in 2021 spanned 51 towns in Maine, whose locations are not all depicted in the map above.

G. Projected Economic Contribution in 2027

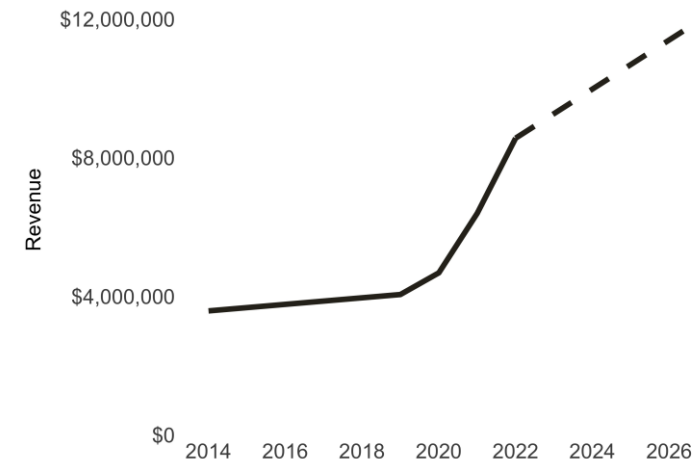
By 2027, CMBG aims to significantly grow its operations, visitation, and economic contribution.

The sharp growth in visitation and revenue that CMBG has realized since 2019 is due to multiple factors including increased demand from the public for meaningful outdoor activities and, in response to this demand, CMBG’s development of popular new exhibits. CMBG invested \$20 million in capital expenditures in 2018. CMBG aims to invest an additional \$42.5 million in capital projects between 2022 and 2027 to support further increases in visitation (projected at +12%) and revenue (+40%). If these projections for visitors and revenue are realized, and assuming that CMBG’s operating expenses and visitor spending patterns follow the same basic structure in 2027 as they do today, CMBG’s economic contribution to the Maine economy in 2027 will rise proportionately, supporting a total of 640 jobs and \$19.9M in earnings.

Figure 7: CMBG Projected Economic Contribution, 2021 vs. 2027

	Visitors	Revenue	Economic Contribution		
			Output	Earnings	Jobs
2021 Estimate	336K	\$8.6M	\$41.9M	\$15.2M	490
2027 Projection	378K	\$12.1M	\$54.8M	\$19.9M	640
<i>Change</i>	<i>12%</i>	<i>40%</i>	<i>31%</i>		

Figure 8: CMBG Actual and Projected Revenue, 2014 – 2027



H. Technical Appendices

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Methodology Overview

Economic contribution is defined as the gross change to an economy as a result of an organization, in this case CMBG, or an event, policy, or other economic shock or change to the economy. The economic contribution of CMBG consists of spending both by CMBG on payroll wages and benefits and from operational and capital spending on vendor services and supplies, as well as the spending by visitors to CMBG. Together, the spending by CMBG and visitors represent the direct economic contribution. The total economic contribution of CMBG is arrived at by adding the direct contribution to the indirect contribution, which is the economic activity that results from recurring rounds of spending from vendors, as well as the induced contribution, which is spending resulting from employee earnings. The analysis presented total economic contribution for both the state of Maine and Lincoln County by utilizing vendor data provided by CMBG.

The analysis estimates total economic contribution as closely as possible to the definition provided above by following the rounds of spending as it flows through supply chain levels. Much like CMBG operations, vendor businesses employ workers and spend money on vendors to conduct their operations. Likewise, workers from these businesses spend their wages in the local economy on things like food, housing, transportation, healthcare, and entertainment, which all catalyze similar spending cycles. Also attributable to CMBG is the spending that accrues from visitors, who also spend on lodging, restaurants, shopping, and other entertainment as part of their visit to CMBG.

Direct operational and capital expenditures, as well as total employee and visitor data, are provided by CMBG. The transaction detail data are used to simulate indirect and induced spending effects using the US Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System II (RIMS). RIMS represents industry and household spending relationships to determine how each dollar spent by CMBG ripples through the economy, stimulating additional economic activity. Economic activity is measured using three common indicators: economic output, earnings, and jobs.

The analysis was prepared by Michael LeVert of Stepwise Data Research, with assistance from Chris Rogers and Laura Fairman.

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Definitions

Direct effects include those resulting from initial rounds of spending from CMBG operations and capital expenditures and spending by CMBG visitors during the year.

Indirect effects result from spending by CMBG at vendors that support operational activities, as well as by CMBG visitors in the tourism sector..

Induced effects result from local consumption demand spending by CMBG employees, and employees of suppliers supported by CMBG vendor spending, and employees of businesses supported by CMBG visitor spending. Workers and households spend earnings in the local economy on goods and services such as food and housing, which in turn support economic activity in the state and local economy.

Employment is estimated as the number of jobs, both full-time and part-time, and includes wage and salaried employees, sole proprietors, and active partners. Employment is reported as inclusive of both the number of full-time (FT) and part-time jobs (PT). Both FT and PT jobs are counted with equal weight and are not distinguished by the model, which is commonly reported in government reported employment data as well as other economic models.

Earnings include all pre-taxed wage and salary related earnings, employee supplements (benefits), and proprietor income resulting from direct, indirect, and induced employment. Total earnings are not additive to total output, but rather are accounted for in those measures and can be understood as the associated labor income.

Economic output is a measure of the total value of all goods and services produced as a result of the operational and capital expenditures in 2021, including payroll, value-added from production, and intermediate sales. Total output can also be interpreted as total industry sales, inclusive of all intermediate inputs. Total output is inclusive of total earnings.

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Methodology Procedures

Assumptions

- The geographic region of focus is the state as well as Lincoln county. Data provided by CMBG included operating revenues and expenses and capital expenditures at the line-item detailed level, employee counts and compensation data with home zip code, vendor spending with zip code, and visitor counts with home zip code, among other descriptive data.

Estimating CMBG Economic Contribution

- A “bill-of-goods” approach was used to estimate the economic contribution, following the RIMS II methodology: see bea.gov/resources/methodologies/RIMSII-user-guide.
- CMBG’s total 2021 expenses by account code were mapped to RIMS II industry codes for analysis. Thus, the appropriate RIMS II industry multiplier was assigned to each line item in CMBG’s statement of functional expenses. Where a RIMS II industry code could not be identified for an expense, the home industry code for CMBG was used, which includes the industry of museums, historical sites, zoos, and parks (NAICS code 712000). This process was used for all 2021 operating and capital expenses.
- Each expenses was then reduced by an estimate of the percent that was spent within Maine (or Lincoln County). This regional expense estimate was derived by analyzing the zip codes for all vendors paid by CMBG. For instance, if an expense went entirely to an out-of-state vendor, those expenses were excluded from the indirect and induced contribution estimates; if 50% of an expense went to vendors located within Maine, 50% of the expense was included in the modeling. Lincoln County estimates were constructed in a similar way, through detailed review of 2021 expenses against the zip codes of vendors and employees. The percentage of employees and vendors within a region resulted in the total spend. When exact regional expense estimates were not possible, the average percentage of regional spending for all vendors was used – 73% for the Maine model and 9% for the Lincoln County model.

Estimating Visitor Contribution on Economic Output

- Visitor data for 2021 was provided by the CMBG. Visitors were split into daytime and overnight visitors based on their home zip code. All visitors from Maine zip codes (and CMBG visitors who are members) were considered day visitors. All visitors from locations outside of Maine were considered overnight visitors.
- Using 2020 Maine Office of Tourism data on the economic Contribution of visitors, such as average party size and spending amount per trip, spending estimates were built for daytime and overnight visitors. Spending by CMBG visitors for one day (no lodging expenses) for day visitors and one day and one night for overnight visitors was included in the economic analysis.
- Visitor spending in Maine was adjusted to reflect only the gross margins for retail, transportation, and groceries. These margins were estimated at 30% for retail and groceries and 47% for transportation. Transportation expenses were assumed to be related mostly to gasoline expenses. The 47% estimate for transportation was derived from the US Energy Office Administration’s analysis that indicates 53% of gasoline costs are from the underlying commodity. See: <https://www.eia.gov/energyexplained/gasoline/factors-affecting-gasoline-prices.php>. Within these industries, the majority of spending is not captured by the local economy, but absorbed by supply chain outside of the state. The results of this method implied an average spending by CMBG overnight visitors of \$92 (including lodging and meals) and by day visitors of \$40. The weighted average for all visitors was \$45.
- The model’s output for average earnings per job (which includes full- and part-time employment) and average output per job appear reasonable and in line with other analyses. Similarly, the final multipliers, which include the contributions of operating, capital, and visitor spending, are reasonable and consistent with other analyses.

	Maine	Lincoln County
TOTAL CONTRIBUTION		
Average Earnings per Job	\$31,000	\$28,000
Average Output per Job	\$86,000	\$79,000
MULTIPLIER		
Output	1.81	1.29
Earnings per Dollar of Output	0.66	0.46
Employment per Million Dollars of Output	21.1	16.4

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Methodology Output: Total Economic Contribution Regional Split

		Direct Contribution	Lincoln County Contribution	Elsewhere in State of Maine Contribution	Total Contribution
Output	Operations	\$6,988,700	\$8,841,200	\$4,969,300	\$13,810,500
	Capital	\$883,400	\$67,300	\$665,300	\$732,700
	Visitors	\$15,238,400	\$15,576,500	\$11,778,000	\$27,354,500
	TOTAL	\$23,110,600	\$24,485,000	\$17,412,700	\$41,897,800
Earnings	Operations	\$3,871,800	\$4,388,700	\$1,662,700	\$6,051,400
	Capital	-	\$16,100	\$216,700	\$232,800
	Visitors	-	\$4,422,700	\$4,472,400	\$8,895,100
	TOTAL	\$3,871,800	\$8,827,400	\$6,351,900	\$15,179,300
Employment	Operations	130	140	40	180
	Capital	-	0	5	5
	Visitors	-	170	135	305
	TOTAL	130	310	180	490