

Economic Impact of the Appalachian Mountain Club's Huts and Lodges in New Hampshire

June 2014 to May 2015

Prepared for the Appalachian Mountain Club

by

Daniel S. Lee

The Center for Rural Partnerships
Plymouth State University

September 2015

EXECUTIVE SUMMARY

This study estimated economic impact of spending by overnight guests to the AMC Huts and Lodges in New Hampshire during a period of June 2014 – May 2015. The report is prepared for two different study areas: 1) the state of New Hampshire; and 2) the Tri-County Area of Coos, Carroll, and Grafton counties of New Hampshire. These estimates should be considered conservative because they excluded 1) residents of New Hampshire; 2) casual visitors who would have to come to New Hampshire regardless of AMC; and 3) day visitors.

Impacts on Economic Activity and Jobs in New Hampshire and the Tri-County Area

- Spending by out of state overnight guests at AMC's White Mountain Huts and Lodges supported \$17.9 million in economic activity in the state between June 2014 and May 2015. (Of this activity, 73% benefited businesses other than AMC.)
- Spending by out of state overnight guests at AMC's White Mountain Huts and Lodges supported \$15.6 million in economic activity in the tri-county area of Coos, Carroll, and Grafton counties. (Of this activity, 64% benefited businesses other than AMC.)
- Spending by out of state overnight guests at AMC's White Mountain Huts and Lodges supported 191 jobs in the state between June 2014 and May 2015. (Of these jobs, 64% benefited businesses other than AMC.)
- Spending by out of state overnight guests at AMC's White Mountain Huts and Lodges supported 169 jobs in the tri-county area of Coos, Carroll, and Grafton counties. (Of these jobs, 54% benefited businesses other than AMC.)

Impacts in the State of New Hampshire

- A total of 10,724 overnight guest parties visited the AMC Huts and Lodges in New Hampshire (Table 13) during the period of June 2014 – May 2015, and spent \$11.21 million in the state of New Hampshire (Table 14).
- The typical overnight guest spent 41 cents of every dollar for recreation and amenities; 25 cents for lodging; 13 cents for restaurants; 7 cents for gasoline; 6 cents for shopping; 3 cents for groceries, and 5 cents for other services (Table 12).
- Massachusetts is the largest market for AMC; more than 42% of the overnight guests came from Massachusetts during the study period (Figure 3).
- The summer season attracts more visitors than any other season, with August being the peak month (Figure 4).
- The \$11.21 million in direct overnight guest spending supported an estimated 142.4 direct full-time equivalent jobs, with labor income of \$3.6 million in New Hampshire (Table 2).
- This estimated direct overnight guest spending supported additional 22.1 indirect full-time equivalent jobs with labor income of \$1.2 million (Table 2).
- Earnings of the workers in the industries, directly or indirectly affected by the AMC's overnight guest spending, supported additional 26.1 induced full-time equivalent jobs with labor income of \$1.4 million (Table 2).
- In sum, the total effect on jobs was 190.6 full-time equivalent jobs, 0.03 percent of the state's total.
- The total effect on labor income was \$6.1 million, 0.01 percent of the state's total.
- Total State government revenues from fees and taxes paid by the AMC's overnight guests were estimated at \$1.23 million during the period of June 2014 – May 2015 (Table 5).

Impacts in the Tri-County Area

- A total of 11,864 overnight guest parties visited the AMC Huts and Lodges in New Hampshire (Table 13) during the period of June 2014 – May 2015, and spent \$11.17 million in the Tri-County Area of New Hampshire (Table 14). These estimates exclude residents of the Tri-County Area and their spending.
- These estimates should be considered conservative because they excluded 1) residents of the Tri-County Area; 2) casual visitors who would have to come to the Tri-County Area regardless of AMC; and 3) day visitors.
- The typical overnight guest spent 41 cents of every dollar for recreation and amenities; 28 cents for lodging; 12 cents for restaurants; 7 cents for shopping; 6 cents for gasoline; 3 cents for groceries, and 3 cents for other services (Table 12).
- The \$11.17 million in direct overnight guest spending supported an estimated 132.5 direct full-time equivalent jobs, with labor income of \$3.9 million in the Tri-County Area, New Hampshire (Table 6).
- This estimated direct overnight guest spending supported additional 16.7 indirect full-time equivalent jobs with labor income of \$0.78 million (Table 6).
- Earnings of the workers in the industries, directly or indirectly affected by the AMC's overnight guest spending, supported additional 19.5 induced full-time equivalent jobs with labor income of \$0.94 million (Table 6).
- In sum, the total effect on jobs was 168.7 full-time equivalent jobs, 0.16 percent of the Tri-County Area's total.
- The total effect on labor income was \$5.7 million, 0.01 percent of the Tri-County Area's total.
- Total State government revenues from fees and taxes paid by the AMC's overnight guests were estimated at \$1.15 million during the period of June 2014 – May 2015 (Table 9).

As described above, the AMC Huts and Lodges play an important quantitative role in the North Country's economy, by creating visitor spending that ultimately leads to the creation of jobs, income, and taxes. To put these impacts into context, however, it is important to consider:

- *The Intangible Impacts of the Hut system.* For starters, the Hut system is an integral part of the regional tourism landscape. The Hut system, and the AMC in general, is viewed as one of the many natural and scenic resources that attract visitors – even those who ultimately do not stay overnight in the Hut system.
- *Regional Trends.* The AMC and the Hut system are also in a good position to benefit from recent trends in the tourism industry. At the statewide level, services (including hospitality services and tourism) are expected to increase. At the regional level, tourism is also an area of economic opportunity.
- *Community Connections.* The numerous relationships between the AMC, the Hut system, and local and regional organizations also provide an intangible measure of economic value. The breadth of these partnerships suggests the North Country itself (specifically trail towns and communities in proximity to Hut-based activities) is connected to the Hut system and at a deep and immeasurable level.

TABLE OF CONTENTS

I.	Project Description	5
II.	Appalachian Mountain Club	6
III.	Industry Trend	8
IV.	Definition of Key Measures	10
V.	Assumptions of the Model	11
VI.	Economic Impact Estimates	12
	1. Economic Impact on the State of New Hampshire	
	2. Economic Impact on the Tri-County Area	
	3. Economic Impacts in Context	
VII.	Appendix	20
	1. Overnight Guest Survey and Actual AMC Overnight Data	
	2. IMPLAN Model and Data	

LIST OF TABLES AND FIGURES

II.	Appalachian Mountain Club Table 1: Overnight Guest Expenditure per Party per Trip in New Hampshire	6
III.	Industry Trend Figure 1: Recent Performance of Leisure and Hospitality Figure 2: Importance of Leisure and Hospitality	8
VI.	Economic Impact Estimates	12
	1. Economic Impact on the State of New Hampshire Table 2: Summary of Economic Impact on New Hampshire, Year 2014-2015 Table 3: Employment Supported by AMC's Overnight Guests in New Hampshire Table 4: Labor Income Supported by AMC's Overnight Guests in New Hampshire Table 5: State and Local Tax Impact in New Hampshire	
	2. Economic Impact on the Tri-County Area Table 6: Summary of Economic Impact on Tri-County Area, Year 2014-2015 Table 7: Employment Supported by AMC's Overnight Guests in Tri-County Area Table 8: Labor Income Supported by AMC's Overnight Guests in Tri-County Area Table 9: State and Local Tax Impact in Tri-County Area	
VII.	Appendix	20
	1. Overnight Guest Survey and Actual AMC Overnight Data	
	a. AMC Overnight Guest Survey Results Table 11: Length of Stay and Party Size Table 12: Average Expenditure per Party Table 13: Estimated Number of Overnight Guest Parties Table 14: Total Expenditure = (Average Expenditure per Party) multiplied by (Number of Overnight Guest Parties)	
	b. Actual AMC Overnight Data Figure 3. Top 10 States by State of Origin Figure 4. Overnight Use by Month	

I. PROJECT DESCRIPTION

The Center for Rural Partnerships (CRP) at Plymouth State University was contracted by the Appalachian Mountain Club (AMC) to estimate economic impact of spending by overnight guests to the AMC Huts and Lodges in New Hampshire. The report is prepared for two different study areas at the AMC's request: 1) the state of New Hampshire; and 2) the Tri-County Area of Coos, Carroll, and Grafton County of New Hampshire. An economic impact model was created from IMPLAN data 2013, the latest data available. This model traces spending by AMC overnight guests and estimates its multiplier effect in the study area.

A survey was distributed to overnight guests at AMC Huts and Lodges during a period of June 2014 – May 2015, to estimate average expenditure per party. AMC outdoor program centers included in the study are two lodges and eight huts in New Hampshire - Highland Center at Crawford Notch and Joe Dodge Lodge at Pinkham Notch, Lonesome Lake, Greenleaf, Galehead, Zealand Falls, Mizpah Spring, Lakes of the Clouds, Madison Spring, and Carter Notch huts.

The findings of this study should be considered conservative because, in estimating the economic impact of AMC, it excluded 1) residents of the study area; 2) casual visitors who would have to come to the study area regardless of AMC; and 3) day visitors.

II. APPALACHIAN MOUNTAIN CLUB

Founded in 1876, AMC is the nation's oldest outdoor recreation and conservation organization. AMC promotes the protection, enjoyment, and understanding of the mountains, forest, waters, and trails of the Appalachian Region. We believe that mountains, forests, and waters have intrinsic worth and also provide recreational opportunities, spiritual renewal, and ecological and economic health for the region. Because successful conservation depends on active engagement with the outdoors, we encourage people to experience, learn about, appreciate, and understand the natural world.

We are more than 100,000 members, advocates, and supporters, including 12 local chapters, more than 16,000 volunteers, and over 450 full time and seasonal staff. Our chapters reach from Maine to Washington, D.C.

We offer more than 8,000 trips each year, from local chapter activities to adventure travel worldwide, for every ability level and outdoor interest — from hiking and climbing to paddling, snowshoeing, and skiing.

We host more than 150,000 guest nights each year at our AMC lodges, huts, camps, shelters and campgrounds. Each AMC Destination is a model for environmental education and stewardship.

We teach people skills to safely enjoy the outdoors and to care for the natural world around us through programs for children, teens, and adults, as well as outdoor leadership training.

We maintain more than 1,800 miles of trails throughout the Northeast, including nearly 350 miles of the Appalachian Trail in five states.

We advocate for land and riverway conservation, monitor air quality, research climate change, and work to protect alpine and forest ecosystems throughout the Northern Forest and Mid-Atlantic Highlands regions.

We seek to educate and inform our own members and an additional 2 million people annually through the media, AMC Books, our website, visitor centers, and AMC Lodges and Huts.

AMC invites and helps people of all ages and abilities to explore and develop a deep appreciation of the natural world. More information is available at www.outdoors.org.

*Source: AMC Fact Sheet: "AMC and Outdoor Recreation."

Table 1. Overnight Guest Expenditures per Party per Trip in New Hampshire

	Staying at Hotels	Hikers/Backpackers	AMC Overnight guests
Amusement and recreation industries	\$43.19	\$142.28	\$431.01
Food services and drinking places	\$135.81	\$230.94	\$134.68
Retail Stores - Miscellaneous	\$36.66	\$32.85	\$66.13
Hotels and motels, including casino hotels*	\$243.28	\$26.56	\$264.55
Retail Stores - Gasoline stations	\$22.70	\$26.62	\$70.04
Automotive equipment rental and leasing	\$15.76	\$23.29	\$19.86
Retail Stores - Food and beverage	\$14.23	\$49.36	\$34.49
Other support services	\$14.77	\$55.56	\$24.26
Total	\$526.40	\$587.46	\$1,045.01

*Staying at Hotels is defined as overnight guests to the state of New Hampshire who stayed at hotels, B&Bs, or motels. Data for both 1) Staying at Hotels and 2) hikers / backpackers were obtained from TNS Global Market Research for the period of 2012-2014. AMC data was collected from the AMC overnight guest survey from June 2014 through May 2015.

III. INDUSTRY TREND

The leisure and hospitality supersector is the industry category that fits best for the type of services that AMC provides. AMC offers a variety of outdoors programs as well as lodging and meals. The supersector consists of these sectors: Arts, Entertainment, and Recreation (NAICS 71), and Accommodation and Food Services (NAICS 72). Figure 1 and 2 illustrate the recent trend in the leisure and hospitality supersector.

Figure 1 compares the industry's recent performance of the Tri-County Area, the state of New Hampshire, and the United States. It used the annual growth rate of the gross domestic product (personal income in the case of the Tri-County Area). Key findings include:

1. In all three areas, the leisure and hospitality supersector had a trough in the second half of the 2000s, and have since been on recovery.
2. However, the precise timing of the industry's business cycle appears to vary among the regions. The Tri-County Area appears to have led the rest of the state, which then appears to have led the rest of the country. The trough occurred in 2005 for the Tri-County Area, in 2008 for New Hampshire, and then in 2009 for the United States.¹
3. The industry is vulnerable to business cycle fluctuations, particularly in the Tri-County Area. For example, the Area saw its annual growth rate fall from 8% to near -4% in one year between 2004 and 2005.

Figure 1. Recent Performance of Leisure and Hospitality



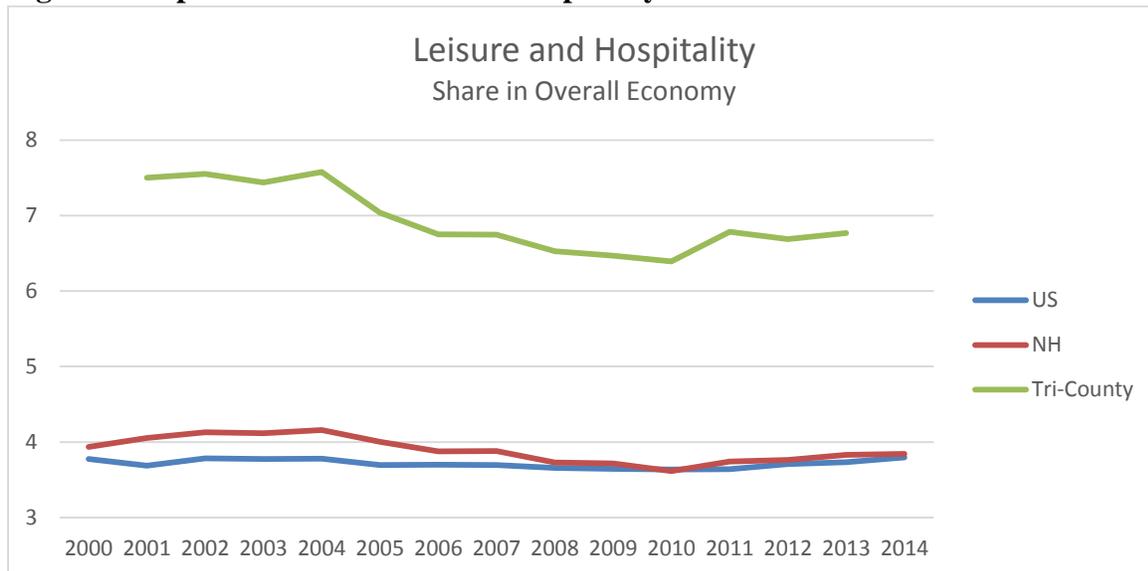
Notes: Gross domestic product was used to measure the industry's performance for New Hampshire and the United States, whereas personal income was used for the Tri-County Area. Gross domestic product is not available at sub-state levels. Both data were obtained from the U.S. Bureau of Economic Analysis.

¹ The Tri-County Area shows a double dip in 2009, following the trough in 2005. This likely reflects the BALSAMS, which closed in the late fall of the same year.

Figure 2 illustrates the relative importance of the leisure and hospitality supersector in the Tri-County Area, the state of New Hampshire, and the United States, using the industry's share in the overall economy. Key findings include:

1. The Tri-County Area relies more heavily on the industry than the rest of the state and the country.
2. In all three areas, the industry's share in the overall economy has risen since the Great Recession. However, the extent of the increases was larger in the Tri-County Area relative to the rest of the state and the country.
3. The industry's share declined during the second half of the 2000s in New Hampshire, including the Tri-County Area. This suggests that the industry grew slower than the rest of the economy during the same period.
4. Despite the recent recovery, as of 2014, the industry had not reached the peak prior to the Great Recession in New Hampshire, including the Tri-County Area.

Figure 2. Importance of Leisure and Hospitality



Notes: Gross domestic product was used to measure the industry's performance for New Hampshire and the United States, whereas personal income was used for the Tri-County Area. Gross domestic product is not available at sub-state levels. Both data were obtained from the U.S. Bureau of Economic Analysis.

IV. DEFINITIONS OF KEY MEASURES

Major economic variables used in this study are as follows:

1. **Employment:** annual average number of full-time equivalent jobs; for example, 10 jobs for the first half of the year and 20 jobs in the second half results in 15 average jobs for the year
2. **Labor income:** employee compensation (wages and salaries plus other compensations) and proprietor income
3. **Value added:** labor income, other types of property income (such as dividends, interest income, rent income, and profits), taxes on production and imports
4. **Output:** total value of production, which is the sum of value added and the cost of all the inter-industry purchases required for production

The study estimates multiplier effects of spending by AMC's overnight guests, which are defined as:

1. **Direct Effect:** economic impact resulted from AMC's overnight guests making direct purchases from AMC and other local businesses; examples include guest expenditure on lodging, food and beverage, gasoline, and recreation (Table 12)
2. **Indirect Effect:** economic impact resulted from directly-affected businesses, including AMC, buying their supplies from other industries in the study area; examples include AMC's expenditure on services to buildings, accounting/tax preparation services, advertising services, and liability insurance.
3. **Induced Effect:** economic impact of workers in both directly and indirectly affected industries spending their earnings in the study area; examples include workers' expenditure on restaurants, groceries, and medical services.

V. ASSUMPTIONS OF THE MODEL

All usual assumptions of the input-output model apply in this study.

- Constant returns to scale
 - As all inputs increase by a factor, output increases by the same factor. For example, output doubles if all inputs double.
- National production coefficients and margins
 - An industry is assumed to have identical production functions and margins in all regions in the country.
- No substitution among inputs
 - No substitution among inputs is assumed for simplicity. In practice, firms may look for an alternative for an input that becomes increasingly more expensive, which may happen if its demand increases and/or its supply falls.
- No constraints to the supply of commodity

VI. ECONOMIC IMPACT ESTIMATES

This study aims to estimate economic impact of overnight guests to AMC Huts and Lodges in NH in two different geographical areas. The definition of the study area has a critical role in determining the extent of economic impact since it is to measure only new money flowing in from outside the study area. Spending by residents of the study area was excluded in measuring economic impact.

- 1) *The state of New Hampshire.* The study area was defined as the state of New Hampshire. In measuring economic impact, therefore, spending by New Hampshire residents was estimated and excluded from the impact estimates.
- 2) *The Tri-County Area.* The study area was defined as the Tri-County Area that consists of Coos, Carroll, and Grafton counties of New Hampshire. Thus, spending by residents of these three counties was excluded from the impact estimates.

1. Economic Impact on the State of New Hampshire

The economic impact of AMC overnight guests spreads across the state's economy by creating and supporting jobs, incomes, and taxes. AMC overnight guests make purchases directly from local businesses (direct effect), who in turn buy their supplies from other industries in the state (indirect effect). In addition, workers in both directly and indirectly affected industries spend their earnings in the state's services industries (induced effect). For example, Table 2 shows that there are 142 full-time equivalent jobs in the state's directly affected industries. These 142 directly affected jobs support an additional 22 full-time equivalent jobs in its supporting industries, such as accounting services. These 142 directly affected jobs and 22 jobs in its supporting industries together support an additional 26 full-time equivalent jobs in services sectors, such as grocery stores, hospitals, gas stations, and restaurants.

Excluding New Hampshire residents and casual overnight guests who would have come to the study area regardless of AMC, a total of 10,724 overnight guest parties were included in measuring the following economic impact estimates on New Hampshire's economy. An explanation of the methodology used to estimate overnight guest parties is explained in detail at the end of this report.

Table 2. Summary of Economic Impact on New Hampshire, Year 2014-2015

Impact Type	Employment (FTE)	Labor Income	Value Added	Output
Direct Effect	142.4	\$3,565,382	\$5,618,189	\$10,140,601
Indirect Effect	22.1	\$1,192,354	\$2,451,324	\$3,946,576
Induced Effect	26.1	\$1,354,593	\$2,326,424	\$3,829,317
Total Effect	190.6	\$6,112,330	\$10,395,938	\$17,916,493

Monetary values expressed are in 2015 dollars. *Employment* is annual average number of full-time equivalent jobs; for example, 10 jobs for the first half of the year and 20 jobs in the second half results in 15 average jobs for the year. *Labor income* is employee compensation (wages and salaries plus other compensations) and proprietor income. *Value added* is labor income, other types of property income (such as dividends, interest income, rent income, and profits), taxes on production and imports. *Output* is total value of production, which is the sum of value added and the cost of all the inter-industry purchases required for production

Table 3 shows New Hampshire’s full-time equivalent number of jobs supported by AMC. It’s grouped by the two-digit North American Industry Classification System (NAICS) code. The largest employment impact was on “Arts, Entertainment & Recreation.” A total of 93 jobs in this sector were supported by AMC. This is no surprise since AMC offers a variety of outdoor programs as well as lodging and meals. The AMC’s overnight guest survey reported “Admission and Recreation Fees” as the largest expenditure item (Table 14).

Table 3: Employment Supported by AMC’s Overnight Guests in New Hampshire

Description	Direct	Indirect	Induced	Total
Total	142.4	22.1	26.1	190.6
11 Ag, Forestry, Fish & Hunting	0.0	0.1	0.1	0.2
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.3	0.1	0.4
23 Construction	0.0	0.4	0.2	0.6
31-33 Manufacturing	0.0	0.4	0.2	0.6
42 Wholesale Trade	0.0	0.4	0.6	1.0
44-45 Retail trade	9.8	1.5	4.5	15.7
48-49 Transportation & Warehousing	0.0	0.7	0.5	1.1
51 Information	0.0	0.8	0.5	1.3
52 Finance & insurance	0.0	1.8	1.9	3.8
53 Real estate & rental	0.7	5.2	1.5	7.4
54 Professional- scientific & tech svcs	0.0	2.8	1.1	3.9
55 Management of companies	0.0	0.8	0.2	0.9
56 Administrative & waste services	3.3	3.5	1.2	7.9
61 Educational svcs	0.0	0.0	1.2	1.2
62 Health & social services	0.0	0.0	5.7	5.7
71 Arts- entertainment & recreation	92.1	0.4	0.9	93.4
72 Accommodation & food services	36.5	1.2	3.3	41.0
81 Other services	0.0	1.5	2.2	3.7
92 Government & non NAICs	0.0	0.5	0.3	0.8

Table 4 shows New Hampshire’s labor income supported by AMC. It’s grouped by the two-digit North American Industry Classification System (NAICS) code. The largest labor income impact was on “Arts, Entertainment & Recreation.” A total of \$1.7 million in this sector was supported by AMC. This is no surprise since AMC offers a variety of outdoor programs as well as lodging and meals. The AMC’s overnight guest survey reported “Admission and Recreation Fees” as the largest expenditure item (Table 14).

Table 4: Labor Income Supported by AMC’s Overnight Guests in New Hampshire

Description	Direct	Indirect	Induced	Total
Total	\$3,565,382	\$1,192,354	\$1,354,593	\$6,112,330
11 Ag, Forestry, Fish & Hunting	\$0	\$2,051	\$1,017	\$3,068
21 Mining	\$0	\$1,193	\$515	\$1,708
22 Utilities	\$0	\$45,224	\$15,637	\$60,861
23 Construction	\$0	\$25,618	\$12,451	\$38,069
31-33 Manufacturing	\$0	\$21,062	\$9,331	\$30,393
42 Wholesale Trade	\$0	\$39,587	\$56,699	\$96,286
44-45 Retail trade	\$316,023	\$54,002	\$182,459	\$552,483
48-49 Transportation & Warehousing	\$0	\$36,664	\$26,811	\$63,475
51 Information	\$0	\$77,289	\$40,999	\$118,288
52 Finance & insurance	\$0	\$150,810	\$142,978	\$293,788
53 Real estate & rental	\$44,750	\$117,915	\$36,324	\$198,989
54 Professional- scientific & tech svcs	\$0	\$173,146	\$74,696	\$247,842
55 Management of companies	\$0	\$87,045	\$17,235	\$104,281
56 Administrative & waste services	\$105,058	\$152,032	\$52,252	\$309,343
61 Educational svcs	\$0	\$963	\$55,241	\$56,203
62 Health & social services	\$0	\$148	\$371,921	\$372,070
71 Arts- entertainment & recreation	\$1,712,093	\$9,306	\$20,606	\$1,742,006
72 Accommodation & food services	\$1,387,458	\$40,812	\$105,788	\$1,534,058
81 Other services	\$0	\$112,664	\$110,562	\$223,225
92 Government & non NAICs	\$0	\$44,824	\$21,072	\$65,896

Table 5 shows state and local government taxes and receipts generated by AMC overnight guest spending in New Hampshire. AMC contributed \$1.22 million of tax revenues to the state and local governments from all sources. The largest source of these tax receipts was sales tax of \$0.6 million, which includes the state's rooms and meals tax.

Table 5: State and Local Tax Impact in New Hampshire

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
<i>State and Local</i>					
Dividends					\$705
Social Ins Tax- Employee Impact	\$2,395	0			
Social Ins Tax- Employer Impact	\$4,631				
Tax on Production and Imports: Sales Tax			612,650		
Tax on Production and Imports: Property Tax			458,997		
Tax on Production and Imports: Motor Vehicle Lic			7,091		
Tax on Production and Imports: Severance Tax					
Tax on Production and Imports: Other Taxes			40,681		
Tax on Production and Imports: S/L NonTaxes			4,402		
Corporate Profits Tax					\$58,372
Personal Tax: Income Tax				\$7,761	
Personal Tax: NonTaxes (Fines- Fees				\$13,174	
Personal Tax: Motor Vehicle License				\$7,137	
Personal Tax: Property Taxes				\$4,329	
Personal Tax: Other Tax (Fish/Hunt)				\$4,050	
Total State and Local Tax	\$7,026	0	\$1,123,821	\$36,451	\$59,076

Notes: *Employee Compensation* in IMPLAN is the total payroll cost of the employee paid by the employer. This includes wage and salary, all benefits (e.g., health, retirement) and payroll taxes (both sides of social security, unemployment taxes, etc.).

Proprietor Income consists of payments received by self-employed individuals and unincorporated business owners. This income also includes the capital consumption allowance and is recorded on Federal Tax form 1040C.

Tax on Production and Imports is one of the three components of value added. This component includes sales and excise taxes, customs duties, property taxes, motor vehicle licenses, severance taxes, other taxes, and special assessments. It excludes most nontax payments, and as the name indicates, subsidies are netted out. (BEA)

Source: IMPLAN

2. Economic Impact on the Tri-County Area

The economic impact of AMC overnight guests spreads across the Tri-County Area's economy by creating and supporting jobs, incomes, and taxes. AMC overnight guests make purchases directly from local businesses (direct effect), who in turn buy their supplies from other industries in the region (indirect effect). In addition, workers in both directly and indirectly affected industries spend their earnings in the region's services industries (induced effect). For example, Table 6 shows that there are 133 full-time equivalent jobs in the state's directly affected industries. These 133 directly affected jobs support an additional 17 full-time equivalent jobs in its supporting industries, such as accounting services. These 133 directly affected jobs and 17 jobs in its supporting industries together support an additional 20 full-time equivalent jobs in services sectors, such as grocery stores, hospitals, gas station, and restaurants.

Excluding the Tri-County Area's residents and casual overnight guests who would have come to the study area regardless of AMC, a total of 11,864 overnight guest parties were included in measuring the following economic impact estimates on the Tri-County Area's economy. An explanation of the methodology used to estimate overnight guest parties is explained in detail at the end of this report.

Table 6. Summary of Economic Impact on Tri-County Area, Year 2014-2015

Impact Type	Employment (FTE)	Labor Income	Value Added	Output
Direct Effect	132.5	\$3,931,761	\$5,916,683	\$10,166,328
Indirect Effect	16.7	\$779,434	\$1,617,643	\$2,767,251
Induced Effect	19.5	\$943,883	\$1,604,733	\$2,666,805
Total Effect	168.7	\$5,655,078	\$9,139,059	\$15,600,383

Monetary values expressed are in 2015 dollars. Monetary values expressed are in 2015 dollars. Employment is annual average number of full-time equivalent jobs; for example, 10 jobs for the first half of the year and 20 jobs in the second half results in 15 average jobs for the year. Labor income is employee compensation (wages and salaries plus other compensations) and proprietor income. Value added is labor income, other types of property income (such as dividends, interest income, rent income, and profits), taxes on production and imports. Output is total value of production, which is the sum of value added and the cost of all the inter-industry purchases required for production

Table 7 shows Tri-County Area’s full-time equivalent number of jobs supported by AMC. It’s grouped by the two-digit North American Industry Classification System (NAICS) code. The largest employment impact was on “Arts, Entertainment & Recreation.” A total of 84 jobs in this sector were supported by AMC. This is no surprise since AMC offers a variety of outdoor programs as well as lodging and meals. The AMC’s overnight guest survey reported “Admission and Recreation Fees” as the largest expenditure item (Table 14).

Table 7: Employment Supported by AMC’s Overnight Guests in Tri-County Area

Description	Direct	Indirect	Induced	Total
Total	132.5	16.7	19.5	168.7
11 Ag, Forestry, Fish & Hunting	0.0	0.1	0.1	0.2
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.2	0.1	0.3
23 Construction	0.0	0.8	0.3	1.1
31-33 Manufacturing	0.0	0.3	0.1	0.4
42 Wholesale Trade	0.0	0.3	0.4	0.7
44-45 Retail trade	10.1	1.5	3.4	15.0
48-49 Transportation & Warehousing	0.0	0.7	0.4	1.0
51 Information	0.0	0.7	0.3	0.9
52 Finance & insurance	0.0	1.0	1.0	1.9
53 Real estate & rental	0.5	4.0	1.1	5.6
54 Professional- scientific & tech svcs	0.0	1.6	0.7	2.3
55 Management of companies	0.0	0.6	0.1	0.7
56 Administrative & waste services	3.7	1.8	0.5	6.1
61 Educational svcs	0.0	0.0	1.0	1.0
62 Health & social services	0.0	0.0	4.7	4.7
71 Arts- entertainment & recreation	82.4	0.3	0.8	83.5
72 Accommodation & food services	35.9	1.1	2.6	39.6
81 Other services	0.0	1.3	1.7	3.1
92 Government & non NAICs	0.0	0.5	0.2	0.7

Table 8 shows Tri-County’s labor income supported by AMC. It’s grouped by the two-digit North American Industry Classification System (NAICS) code. The largest labor income impact was on “Arts, Entertainment & Recreation.” A total of \$2.0 million in this sector was supported by AMC. This is no surprise since AMC offers a variety of outdoor programs as well as lodging and meals. The AMC’s overnight guest survey reported “Admission and Recreation Fees” as the largest expenditure item (Table 14).

Table 8: Labor Income Supported by AMC’s Overnight Guests in Tri-County Area

Description	Direct	Indirect	Induced	Total
Total	\$3,931,761	\$779,434	\$943,883	\$5,655,078
11 Ag, Forestry, Fish & Hunting	\$0	\$4,951	\$1,788	\$6,739
21 Mining	\$0	\$807	\$290	\$1,096
22 Utilities	\$0	\$46,752	\$14,144	\$60,896
23 Construction	\$0	\$42,437	\$14,727	\$57,165
31-33 Manufacturing	\$0	\$15,473	\$3,630	\$19,103
42 Wholesale Trade	\$0	\$26,370	\$33,268	\$59,638
44-45 Retail trade	\$314,970	\$52,829	\$133,661	\$501,460
48-49 Transportation & Warehousing	\$0	\$33,113	\$18,733	\$51,846
51 Information	\$0	\$45,526	\$17,214	\$62,740
52 Finance & insurance	\$0	\$76,350	\$54,191	\$130,542
53 Real estate & rental	\$29,971	\$71,652	\$21,439	\$123,063
54 Professional- scientific & tech svcs	\$0	\$82,437	\$31,915	\$114,352
55 Management of companies	\$0	\$45,332	\$7,201	\$52,533
56 Administrative & waste services	\$49,576	\$59,867	\$18,233	\$127,677
61 Educational svcs	\$0	\$1,341	\$57,560	\$58,901
62 Health & social services	\$0	\$104	\$317,174	\$317,278
71 Arts- entertainment & recreation	\$1,964,937	\$10,609	\$21,361	\$1,996,908
72 Accommodation & food services	\$1,572,306	\$43,033	\$83,242	\$1,698,581
81 Other services	\$0	\$80,514	\$77,976	\$158,490
92 Government & non NAICs	\$0	\$39,935	\$16,136	\$56,072

Table 9 shows state and local government taxes and receipts generated by AMC overnight guest spending in the Tri-County Area. AMC contributed \$1.15 million of tax revenues to the state and local governments from all sources. The largest source of these tax receipts was sales tax of \$0.6 million, which includes the state's rooms and meals tax.

Table 9: State and Local Tax Impact in Tri-County Area

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
<i>State and Local</i>					
Dividends					\$1,564
Social Ins Tax- Employee Impact	\$4,718	\$0			
Social Ins Tax- Employer Impact	\$9,122				
Tax on Production and Imports: Sales Tax			612,681		
Tax on Production and Imports: Property Tax			393,928		
Tax on Production and Imports: Motor Vehicle Lic			4,607		
Tax on Production and Imports: Severance Tax					
Tax on Production and Imports: Other Taxes			31,532		
Tax on Production and Imports: S/L NonTaxes			173		
Corporate Profits Tax					\$64,961
Personal Tax: Income Tax				\$6,161	
Personal Tax: NonTaxes (Fines- Fees				\$11,360	
Personal Tax: Motor Vehicle License				\$4,313	
Personal Tax: Property Taxes				\$3,487	
Personal Tax: Other Tax (Fish/Hunt)				\$2,830	
Total State and Local Tax	\$13,840	\$0	\$1,042,921	\$28,151	\$66,525

Notes: *Employee Compensation* in IMPLAN is the total payroll cost of the employee paid by the employer. This includes wage and salary, all benefits (e.g., health, retirement) and payroll taxes (both sides of social security, unemployment taxes, etc.).

Proprietor Income consists of payments received by self-employed individuals and unincorporated business owners. This income also includes the capital consumption allowance and is recorded on Federal Tax form 1040C.

Tax on Production and Imports is one of the three components of value added. This component includes sales and excise taxes, customs duties, property taxes, motor vehicle licenses, severance taxes, other taxes, and special assessments. It excludes most nontax payments, and as the name indicates, subsidies are netted out. (BEA)

Source: IMPLAN

3. Economic Impacts in Context

As described above, the AMC Hut system plays an important quantitative role in the North Country's economy, by creating visitor spending that ultimately leads to the creation of jobs, income, and taxes. To put these impacts into context, however, it is important to consider how the AMC Hut system connects to the broader tourism landscape of the North Country. This analysis includes a) the intangible impacts of the Hut system, b) how the Huts might be impacted by regional trends, and c) the community connections between the AMC and regional stakeholders.

Intangible Impacts. For starters, the Hut system is an integral part of the regional tourism landscape. The Hut system, and the AMC in general, is viewed as one of the many natural and scenic resources that attract visitors – even those who ultimately do not stay overnight in the Hut system. Put simply, the AMC and the Hut system contribute to a vibrant tourism economy in the North Country that includes the White Mountain National Forest, New Hampshire state parks, public and commercial attractions, museums, historic sites, resort hotels, conference centers, educational institutions, retail outlets, and sports facilities. Regionally, these and other North Country resources attract approximately 4 million visitors each year.² The economic activity of these visitors, while not directly attributable to the AMC Hut system, is arguably enhanced by its existence. Therefore, the decline or degradation of the Hut system would undoubtedly weaken the tourism landscape and reduce its regional economic impact.

Additionally, the AMC and the Hut system play a key role in protecting the environment in which the Hut system is located, thus providing additional intangible economic benefits. By protecting the natural environment through education and conservation, the AMC and those who work at the Hut system help visitors protect the intrinsic value of the region's natural resources, ultimately making them more attractive and valuable to the regional economy. Ultimately, this “ecosystems services” approach to economic impact analysis suggests that the Hut system as a whole represents a mosaic of conservation that is intrinsically more valuable than the sum of its parts.

Regional Trends. The AMC and the Hut system are also in a good position to benefit from recent trends in the tourism industry. At the statewide level, services (including hospitality services and tourism) are expected to continue their increase of the past decade. This is evidenced by industry projections, which suggest that employment in eating and drinking establishments will increase by 7.7% over the next 10 years³.

At the regional level, tourism is also an area of economic opportunity. The latest North Country Economic Index demonstrates an increase in tourism activity, with higher levels of tourism visits, higher traffic counts, and increased spending at lodging establishments⁴. It should be noted, however, that tourism remains one of the only regional bright spots, as other regional

² Goss, L.E. 2011. New Hampshire Fiscal year 2011 Tourism Satellite Account. Prepared for the NH Division of Travel and Tourism Development.

³ NHES, 2012. Quarterly Census of Employment and Wages. <http://www.nhes.gov/elmi/statistics/qcew-data.htm>

⁴ North Country Economic Index, Spring 2015. <http://www.plymouth.edu/north-country-economic-index/>

economic indicators (labor market, manufacturing, and wages) continue to demonstrate instability.

Community Connections. The numerous relationships between the AMC, the Hut system, and local and regional organizations also provide an intangible measure of economic value. These are reflected in partnerships with state agencies, hiking clubs, non-profit organizations, educational institutions, and research organizations. The impacts of these partnerships are wide-reaching, spanning policy development, environmental education, research, transportation, community building, tourism services, media, and economic development. The breadth of these partnerships demonstrates that the North Country itself (specifically trail towns and communities in proximity to Hut-based activities) is connected to the Hut system and at a deep and immeasurable level. The Hut system is an important component of the “quality of life” of the North Country region, signifying enjoyment of the region’s natural scenic beauty, the pursuit of healthy lifestyles, and the protection of special places. The Hut system, therefore, contributes not only to the economic base of the region, but also to the lifestyle and sense of place that so many residents and visitors value.

It should be noted, however, that issues exist which have the potential to threaten the economic, environmental, and social contributions of the AMC and the Hut system. These include the growing economic disparity between the rural North Country and the rest of New Hampshire, changes to the forest products industry including a shift away from manufacturing, changes in forest land ownership, and the aging population of the region. The good news is that projections of these trends (into the next decade) suggest incremental rather than dramatic change. It is therefore in the best interests of the AMC and the Hut system to continue their attenuation to regional change and development.

In summary, quantifying and interpreting the Hut system’s place in the larger economic landscape of the North Country will require additional data and analysis designed specifically to supplement the modeling demonstrated in this report. At the highest levels of analysis, it is safe to say that North Country tourism indicators such as employment and spending are more likely to be affected by external forces than by the direct actions of the AMC. The Hut system, however, is still an important regional resource, evidenced not just by its measured economic impact but also by the intangible connections to the environmental and social well-being of the region. To maintain this impact, the AMC and the Hut system must remain an active partner in the tourism landscape.

VII. APPENDIX

1. Overnight Guest Survey and Actual AMC Overnight Data

Overnight guest counts and spending were estimated based on two sources – 1) AMC overnight guest survey and 2) actual AMC overnight data. Whereas the number of overnight guest parties was obtained from the actual AMC overnight data, overnight guest spending behavior and characteristics, such as the number of casual overnight guests who would have come to the study area regardless of AMC, came from the AMC overnight guest survey. Total overnight guest expenditure was estimated using these data sources.

a. AMC Overnight Guest Survey Results

The following tables summarize the characteristics of AMC overnight guests as reported in the survey, including their spending in the study area. The survey forms were distributed by AMC staff members at each of the 10 AMC facilities considered in this study during the period of June 2014 - May 2015. A total of 1,857 survey responses were returned. Since economic impact reflects new money flowing in from outside the study area, not all responses are included in the study. Excluded are residents of the study area as well as casual overnight guests who would have come to the study area, regardless of AMC.

Table 11. Length of Stay and Party Size

	New Hampshire	Tri-County
Length of Stay (# of nights)		
AMC	1.83	1.79
other Tri-County Area	0.47	0.44
other NH	0.12	
Party Size (# of people)	2.81	2.80

The number of nights at AMC and the party size are not survey estimates but came from the actual AMC visitation data. The number of nights at other Tri-County Area and other NH were collected from the survey.

Table 12. Average Expenditure per Party

Spending by Category	New Hampshire	Tri-County
Admission/Recreation Fees	\$431.01	\$384.54
Food & Beverages (restaurants, concessions, grocery stores, etc.)	\$121.99	\$103.99
Entertainment, Lounges & Bars (cover charges, drinks, etc.)	\$12.68	\$11.29
Retail Shopping (clothing, souvenirs, gifts, etc.)	\$66.13	\$61.38
Lodging Expenses (hotel, motel, campgrounds)	\$264.55	\$261.89
Private Auto Expenses (gas, oil, repairs, parking fees, tolls etc.)	\$70.04	\$57.02
Rental Car Expenses	\$19.86	\$11.31
State Liquor	\$34.49	\$31.08
All other expenses	\$24.26	\$19.29
Total	\$1,045.01	\$941.79

Table 13 describes how the number of overnight guest parties included in the study was estimated. Although casual overnight guests who would have come to the study area regardless of AMC were excluded, some of these casual overnight guests reported that they did stay longer because of AMC. Such casual overnight guests were asked how much longer they stayed in the study area because of AMC. This extended stay due to AMC was included in counting overnight guest parties who brought in new dollars from outside the study area.

Table 13. Number of Overnight Guest Parties

	New Hampshire	Tri-County
1) Overnight guest parties, excluding residents and casuals		
Overnight guest parties excluding residents*	12,678	14,351
(casual overnight guests)/(overnight guest parties excluding residents)	29%	32%
Overnight guest parties, excluding residents and casuals	9,008	9,823
2) Casuals who stayed longer		
Ave. number of extended nights per party due to AMC	2.3	2.2
(casual parties who stayed longer)/(overnight guests parties excl. residents)	10.9%	11.4%
Number of casual parties who stayed longer	1,381	1,631
Number of nights per party casuals who stayed longer	3,148	3,656
Ave. Number of nights per party at AMC	1.83	1.79
Number equivalent of overnight guest parties, excl. residents**	1,715	2,044
Number of overnight guest parties that was included in impact estimates	10,724	11,864

*These data were obtained from the actual AMC overnight data. The number of overnight guest parties for New Hampshire is smaller than that of the Tri-County Area. This is because overnight guest parties that were considered in estimating economic impact on New Hampshire excludes residents of all New Hampshire counties, while overnight guest parties that were considered in estimating economic impact on the Tri-County Area only excludes residents of Coos, Carroll, and Grafton counties of New Hampshire but includes residents of all other counties in New Hampshire.

**Alternatively, the number of casual parties who stayed longer could have been used in calculating total expenditure. But this would have underestimated impact since the extended stay of a typical casual overnight guest party due to AMC was reported longer than the average length of stay of all overnight guest parties.

Table 14. Total Expenditure = (Average Expenditure per Party) times (Number of Overnight Guest Parties)

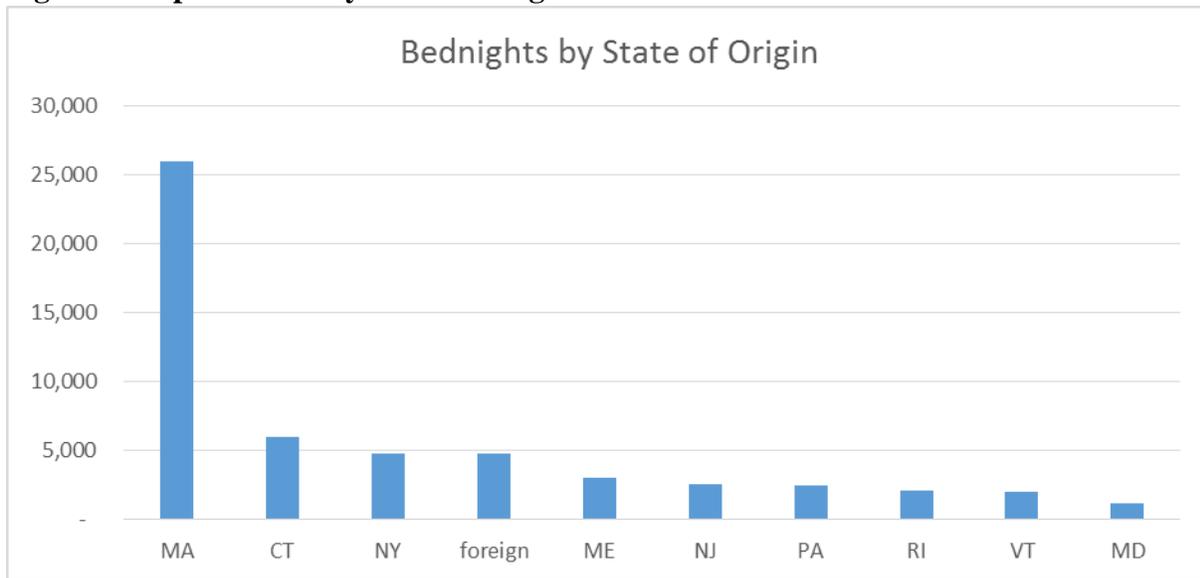
Spending by Category	New Hampshire	Tri-County
Admission/Recreation Fees	\$4,621,923	\$4,562,254
Food & Beverages (restaurants, concessions, grocery stores, etc.)	\$1,308,208	\$1,233,708
Entertainment, Lounges & Bars (cover charges, drinks, etc.)	\$135,999	\$133,907
Retail Shopping (clothing, souvenirs, gifts, etc.)	\$709,157	\$728,246
Lodging Expenses (hotel, motel, campgrounds)	\$2,836,898	\$3,107,050
Private Auto Expenses (gas, oil, repairs, parking fees, tolls etc.)	\$751,054	\$676,508
Rental Car Expenses	\$212,962	\$134,183
State Liquor	\$369,803	\$368,725
All other expenses	\$260,159	\$228,909
Total	\$11,206,163	\$11,173,490

b. Actual AMC Overnight Visitation Data

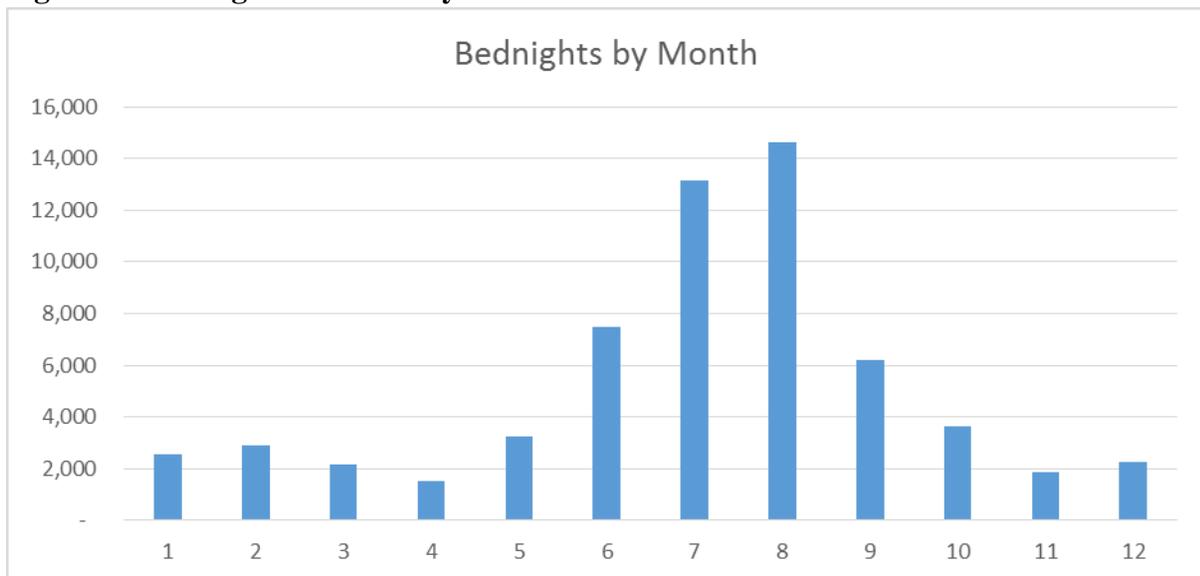
The following charts characterize the actual AMC overnight data. The data were collected during the period of June 2014 - May 2015. The data points represent the number of bednights. A total of 72,053 bednights were reported during the study period. The following analysis does not include New Hampshire residents.

Key characteristics include:

- Massachusetts is the top state of origin. More than one-third of overnight guests came from Massachusetts, when measured by bednights.
- A significant share of the overnight guests came from outside the United States, making up 6.6% of all bednights.
- The summer is clearly the peak season for AMC, with August marking the top visitation and April being the slowest month.
- The busiest AMC outdoor program centers are the two roadside lodges of Highland Lodge and Joe Dodge Lodge, making up 35% of all visits.

Figure 3. Top 10 States by State of Origin*

* Residents of New Hampshire were excluded because their spending does not represent new money flowing into the study area (New Hampshire), which is what this study aims to measure.

Figure 4. Overnight Visitation by Month

2. IMPLAN Model and Data

The model used in this analysis was built by customizing the Impact Analysis for Planning (IMPLAN) regional input-output software. The first input-output model was developed by Dr. Wassily Leontieff to help the United States mobilize to meet the demand of the World War II. For this work in input-output models, he won the Nobel Prize in Economic Science in 1973.

The input-output model was later applied to regional economies. With the enactment of the National Forest Management Act in 1976, the U.S.D.A. Forest Service needed a systematic tool for evaluating the national forest management plans on local residents and businesses; hence, the creation of the IMPLAN. The advancement of computer technologies made it possible to extrapolate, extend, and convert existing data to regional economies using non-survey methods, without the cost of onsite data collection.

Today, IMPLAN is widely used for evaluating economic impacts beyond the forest and logging sector. It traces impacts through direct, indirect and induced impacts. Direct impact is the initial expenditures, or production, made by the industry experiencing the economic change; indirect impact represents the effects of local inter-industry spending through the backward linkages; and induced impact is the results of local spending of employee's wages and salaries for both employees of the directly affected industry, and the employees of the indirectly affected industries. Backward linkages are the tracking of industry purchases backward through the supply chain (Frances Day).

IMPLAN data is constructed primarily from federal government data, including:

- U.S. Bureau of Economic Analysis Benchmark I/O Accounts of the U.S.
- U.S. Bureau of Economic Analysis Output estimates
- U.S. Bureau of Economic Analysis REIS Program
- U.S. Bureau of Labor Statistics Covered Employment and Wages Program
- U.S. Bureau of Labor Statistics Consumer Expenditure Survey
- U.S. Census Bureau County Business Patterns program
- U.S. Census Bureau Decennial Census and Population Surveys
- U.S. Census Bureau Economic Censuses and Surveys
- U.S. Department of Agriculture Crop and Livestock Statistics
- U.S. Geological Survey