

Economic Impact of Hiking in the Grand Mesa, Uncompahgre & Gunnison National Forests

JAMES N. MAPLES, PhD

MICHAEL J. BRADLEY, PhD

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Image Credit: Carl Zoch



Executive Summary of Study

This study examined the economic impact of hiking visitors to Colorado’s Grand Mesa, Uncompahgre and Gunnison National Forest (GMUG) National Forest. This includes day hiking, backpacking, trail running, and peak bagging.

Hikers visit the GMUG over 600,000 times per year. An estimated 60% of these visits are from persons living outside the GMUG and surrounding region.

In all, 501 hikers around the nation responded to the survey, with 293 respondents sharing the economic expenditures from their most recent 2017-2018 trip to the GMUG.

Based on the economic impact analysis and NVUM visitation figures, the research team estimates:

- 1. Hiking visitors who are not local residents annually spend an estimated \$24 million within the GMUG and surrounding area.
- 2. Hiking visitors’ expenditures support an estimated 235 jobs and \$6 million in job income in the GMUG and surrounding area.



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Meet Your Research Team

DR. JAMES N. MAPLES is an associate professor of sociology at Eastern Kentucky University, where he examines the political economy of renewable tourism. His research interests include the economic impact of outdoor recreation and social change in rural areas. In his free time, he is conducting an oral history of rock climbing in Kentucky's Red River Gorge. He is also an Eagle Scout, Girl Scout dad, and metal detectorist.



james.maples@eku.edu

DR. MICHAEL J. BRADLEY is an associate professor and director of graduate studies in the Department of Recreation and Park Administration at Eastern Kentucky University. His professional and academic interests include human dimensions of natural resource and wildlife management as well as sustainable recreation practices as it relates to outdoor recreation.



michael.bradley@eku.edu

CONTACT INFORMATION FOR FUTURE STUDIES

Our research team regularly conducts economic impact studies, surveys, assessments, interpretation studies, and other kinds of community-driven studies. If you or your organization is interested in conducting a study, please contact lead researchers Dr. James Maples or Dr. Michael Bradley (emails above) for further information.

Methodological Notes

STUDY PURPOSE

The purpose of this study was to examine the annual economic impact of hiking visitors in the GMUG based upon expenditure patterns from their most recent 2017 or 2018 visit to the GMUG. For this report, hiking includes day hikers, trail runners, backpackers, and peak baggers.

DATA COLLECTION

The researchers collected data using an online survey available from July 14, 2018 until August 24, 2018. This is best treated as a convenience sample. The final survey language is available upon request. The survey included questions examining economic expenditures across fifteen sectors and are outlined in this report. The survey included questions about where the respondent lives the majority of the year, the size of the group accounted for in the respondent's economic impact questions, and a lodging selection. The research team used all of these questions in creating the economic estimates.

ANALYSIS

The research team used established techniques utilized in previous peer-reviewed economic impact studies. First, respondents were sorted by local residents (respondents who self-reported as being a resident of the GMUG and immediate surrounding area) and visitors (respondents self-reporting as living outside the GMUG area). Local residents are separated from the economic impact estimates as their expenditures, while important, are not typically treated as true economic impact. Their mean expenditures are, however, reported as a supplement to the economic impact estimates.

Second, mean expenditures were established for hiking visitors in each study area for each of the fifteen economic impact categories. Means are also included for expenditures outside the study area but still within the state of Colorado.

Third, group sizes in expenditures are addressed by dividing the respondent's reported expenditures by their reported group size.

Fourth, respondent cases in each mean with values higher than the third standard deviation were marked as missing data. This technique prevents overestimating economic impact and provides reliable, conservative means.

Fifth, these means are entered into IMPLAN, an industry-leading economic impact calculation system, which uses input-output modeling to establish economic impact across three measures: output, value added, and job income.

Sixth, these estimates are shaped by visitation data from the 2014 National Visitor Use Monitoring (NVUM) survey conducted by the Forest Service. Visitation data were discussed with Colorado Mountain Club and categorized by study area to create a more nuanced economic estimate by study area.

Study Regions

This study builds around three areas based around hiking destinations in the GMUG National Forests. Economic impact study areas are built around common hiking destinations and the cities and towns where hiker visitors are most apt to spend funds as part of their trip. Each of the study areas are discussed in detail below.

Table 1

Economic Indicator Summary of Study Areas			
<i>Indicator</i>	<i>Gunnison</i>	<i>Grand Mesa</i>	<i>Uncompahgre</i>
Gross Regional Product*	\$1,636,363	\$7,417,195	\$2,099,645
Total Personal Income*	\$1,692,003	\$8,395,923	\$2,315,304
Total Employment	28,272	121,063	35,190
Number of Industries	210	295	229
Land Area (square miles)	7,421	6,710	4,069
Population	41,855	221,996	54,345
Total Households	18,440	87,221	22,076

STUDY AREA ONE: GUNNISON AREA

The Gunnison study area is modeled around hiking trail opportunities in Crested Butte/Northern Gunnison Basin, La Garita/Southern Gunnison Basin, and Collegiate Peaks. The area is modeled around Gunnison, Chafee, and Saguache Counties, which include cities/towns of Gunnison, Salida, and Saguache.

The GRP and total personal income for this area both exceed \$1.6 billion. There are around 28,272 jobs in the study area spread across 210 industries and 7,421 square miles. The study area has a population of approximately 41,855 and contains 18,440 households.

STUDY AREA TWO: GRAND MESA AREA

The Grand Mesa area is built around recreation in North Fork Valley and Grand Mesa areas. It is modeled in Mesa, Delta, and Montrose counties which includes cities/towns of Paonia, Crawford, Hotchkiss, Montrose, Grand Junction, and Palisade. Notably, Mesa County includes the Grand Junction metropolitan statistical area.

The GRP totals over \$7 billion and personal income exceeds \$8 billion in this study area, with the Grand Junction metro making an important contribution to this figure. There are an estimated 131,063 jobs in the study area spread across 295 industries over 6,710 square miles. The population here is much larger than the other two areas as a result of the metropolitan area and includes over 221,000 residents in over 87,000 households.

*Gross Regional Product and Total Personal Income listed in 1000s

Study Regions, Continued

STUDY AREA THREE: UNCOMPAHGRE AREA

The Uncompahgre area includes recreation opportunities in the Northern San Juans and Uncompahgre Plateau areas. It is modeled in Ouray, Montrose, and San Miguel counties which include notable locations such as Telluride, Norwood, Silverton, Ouray, Ridgway (the often described as the “gateway to the San Juans”), and Montrose.

The study area’s GRP exceeds \$2 billion with a personal income of \$2.3 billion. There are an estimated 35,190 employees in this study area employed in 229 different industries. The land area includes of 4,069 square miles, which includes over 54,245 residents and over 22,076 households.

Visitor Mean Expenditures

Tables 2A-2C feature the estimate mean expenditures for hiker visitors in each study area across fifteen common economic impact areas. Mean expenditures are an averaged figure of the economic activity created by one typical outdoor recreation visit to the study area. In this table, only visitors are represented (and later modeled) to estimate economic impact, as is the standard in economic impact research.

Table 2A lists the mean expenditures for Gunnison hiking visitors. Their highest expenditures are in sit-down dining (dining that includes a wait staff, \$56.85 per trip average) and indoor lodging (such as hotels and cabins, \$42.31). Gas (\$32.93) and groceries (\$22.68) are also important expenditure categories here.

Table 2A

Visitor Mean Expenditures for the Gunnison Study Area (Estimated 39,600 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	61	\$9.08	27.29	0	200
Sit-down dining	67	\$56.85	83.85	0	500
Grocery Stores	66	\$22.68	35.67	0	200
Gas station food	66	\$3.16	5.45	0	20
Gasoline & oil	66	\$32.93	33.47	0	150
Retail gear	66	\$5.92	15.70	0	70
Retail, non-food	67	\$10.95	26.03	0	100
Rental gear	67	\$0.00	0.00	0	0
Guide service	67	\$1.74	14.25	0	117
Rental Car	66	\$0.00	0.00	0	0
Taxi / Uber / Lyft	66	\$0.00	0.00	0	0
Adventure tourism	67	\$0.50	4.07	0	33
Entertainment	66	\$0.15	1.23	0	10
Hotels & resorts	67	\$42.31	108.85	0	500
Camping	67	\$5.34	27.26	0	206

Visitor Mean Expenditures, Continued

Table 2B lists hiking visitor average expenditures in Grand Mesa. Due to a lower response rate, these means should be treated with caution. However, they follow a similar pattern of expenditures in both Tables 2a and 2c, such as high expenditures in sit-down dining (\$47.50), gas (\$37.92), groceries (\$37.50), and indoor lodging (\$25.00).

Table 2B

Visitor Mean Expenditures for the Grand Mesa Study Area (Estimated 39,600 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	7	\$2.86	7.56	0	20
Sit-down dining	8	\$47.50	71.66	0	200
Grocery Stores	8	\$37.50	42.59	0	100
Gas station food	8	\$3.75	7.44	0	20
Gasoline & oil	8	\$37.92	18.16	0	60
Retail gear	8	\$0.00	0.00	0	0
Retail, non-food	8	\$0.00	0.00	0	0
Rental gear	8	\$0.00	0.00	0	0
Guide service	8	\$0.00	0.00	0	0
Rental Car	8	\$0.00	0.00	0	0
Taxi / Uber / Lyft	8	\$0.00	0.00	0	0
Adventure tourism	8	\$0.00	0.00	0	0
Entertainment	8	\$6.25	17.68	0	50
Hotels & resorts	8	\$25.00	70.71	0	200
Camping	8	\$7.75	14.36	0	32

Table 2C looks at average hiking visitor expenditures in the Uncompahgre area. Here, indoor lodging averaged \$73.77 and sit-down dining averaged around \$72.35. Gas (\$45.32) and groceries (\$26.98) also remained high spending categories.

Table 2C

Visitor Mean Expenditures for the Uncompahgre Study Area (Estimated 39,600 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	49	\$9.42	15.45	0	50
Sit-down dining	49	\$72.35	76.38	0	300
Grocery Stores	52	\$26.98	33.86	0	125
Gas station food	51	\$5.06	7.57	0	30
Gasoline & oil	52	\$45.32	40.33	0	250
Retail gear	52	\$6.99	21.49	0	100
Retail, non-food	50	\$10.67	19.44	0	80
Rental gear	52	\$0.00	0.00	0	0
Guide service	52	\$1.35	9.71	0	70
Rental Car	52	\$0.00	0.00	0	0
Taxi / Uber / Lyft	52	\$0.00	0.00	0	0
Adventure tourism	52	\$0.00	0.00	0	0
Entertainment	51	\$3.27	12.41	0	67
Hotels & resorts	53	\$73.77	148.51	0	600
Camping	53	\$14.14	43.80	0	220

Economic Impact Terminology

In the following paragraphs, three terms describe economic impact: *direct effect*, *indirect effect*, and *induced effect*.

Direct effect is the economic impact created by the presence of the economic activity. For example, if a local restaurant sells \$1K in food, its direct effect would be \$1K.

Indirect effect is economic activity created when local businesses purchase goods and services from other local industries as a result of the direct effect.

Induced effect is the estimated local expenditures by local households and employees as a result of income created from the direct effect.

Labor income impact is measured by the estimated labor income created by the economic activity in the region. This is a conservative measure of economic impact.

Value added is a measure of the increase in the study region's gross domestic product. Gross domestic product is a measure of all goods and services produced in the study area and is treated as a measure of the size of the economy.

Output is a measure of the increase in business sales revenue in the study area as a result of the economic impact being studied. It includes business revenues as well as costs of doing business. It includes value added as part of its calculation.

Economic Impact Modeling

Tables 3A - 3C detail the economic impact linked to hiking visitation across the three study areas. In sum, hiking visitors spent an estimated \$24,926,030 across the three study areas. Across all three areas, hikers support an estimated 235 jobs and \$6 million in job income, which is a useful and conservative measure of economic impact.

Table 3A summarizes results for the Gunnison study area. Here, hikers support over 77 jobs and \$1.7 million in job income.

Table 3A

Economic Impact Summary of Hiking Visitors in the Gunnison Study Area				
<i>Impact Type</i>	<i>Jobs Supported</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Direct	62.4	\$1,396,587	\$1,821,671	\$3,387,156
Indirect	7.5	\$195,880	\$390,033	\$905,956
Induced	7.3	\$204,998	\$439,868	\$823,464
Total Effect	77.2	\$1,797,466	\$2,651,572	\$5,116,576

Table 3B describes visitor hiker expenditures in the Grand Mesa study area. There, hiker visitors support an estimated 69 jobs and \$1.7 million in labor income.

Table 3B

Economic Impact Summary of Hiking Visitors in the Grand Mesa Study Area				
<i>Impact Type</i>	<i>Jobs Supported</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Direct	54.0	\$1,239,008	\$1,704,344	\$2,983,659
Indirect	6.7	\$227,499	\$386,092	\$832,497
Induced	9.1	\$312,925	\$560,320	\$1,056,803
Total Effect	69.7	\$1,779,432	\$2,650,756	\$4,872,959

Table 3C examines the Uncompahgre study area. There, hiker visitors support an estimated 88 jobs and \$2.5 million in job income.

Table 3C

Economic Impact Summary of Hiking Visitors in the Uncompahgre Study Area				
<i>Impact Type</i>	<i>Jobs Supported</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Direct	69.9	\$1,899,988	\$2,381,943	\$4,153,394
Indirect	7.7	\$274,850	\$495,072	\$1,026,928
Induced	10.6	\$342,301	\$666,554	\$1,237,553
Total Effect	88.2	\$2,517,138	\$3,543,569	\$6,417,876

Visitor Taxation Generation Within the Study Areas

Tables 4A - 4C detail the estimate taxes (both local, state, and federal) generated by hiking visitors in the three study areas.

Table 4A

Annual Estimated Taxation Generated by Hiking Visitors in the Gunnison Study Area		
<i>Tax Type</i>	<i>State & Local</i>	<i>Federal</i>
Employee Compensation	\$5,630	\$199,550
Proprietor Income	\$0	\$6,537
Tax on Production & Imports	\$321,283	\$44,898
Households	\$41,795	\$127,435
Corporations	\$3,246	\$25,961

Table 4A focuses on the Gunnison area, where hiker visitor expenditures support \$371,000 in state/local taxes on and \$404,000 in federal taxes.

Table 4B

Annual Estimated Taxation Generated by Hiking Visitors in the Grand Mesa Study Area		
<i>Tax Type</i>	<i>State & Local</i>	<i>Federal</i>
Employee Compensation	\$5,688	\$212,241
Proprietor Income	\$0	\$4,941
Tax on Production & Imports	\$326,055	\$43,834
Households	\$41,574	\$129,586
Corporations	\$3,569	\$29,403

Table 4B examines taxation in Grand Mesa. Here, hiker visitors support \$376,000 in state/local taxes and \$420,000 in federal taxes.

Table 4C

Annual Estimated Taxation Generated by Hiking Visitors in the Uncompahgre Study Area		
<i>Tax Type</i>	<i>State & Local</i>	<i>Federal</i>
Employee Compensation	\$7,891	\$296,495
Proprietor Income	\$0	\$9,051
Tax on Production & Imports	\$407,381	\$42,088
Households	\$61,895	\$189,195
Corporations	\$3,412	\$27,889

Table 4C lists tax generation in the Uncompahgre study area. In this study area, hiker visitors support \$480,579 in state/local taxes, as well as over \$564,000 in federal taxes.

Visitor Expenditures Beyond Study Area But In State

Table 5 lists mean expenditures for hiker visitors who reported funds spent outside the study areas but still within the state’s boundaries as a result of their most recent trip to a study area. These are important expenditures that, even though they are not modeled in the study, continue to demonstrate the economic importance of human-powered outdoor recreation in the region.

Table 5 summarizes these expenditures for visitors in this study. Beyond the borders of the GMUG and surrounding region, hikers noted expenditures in gasoline (\$20.53), sit-down dining (\$18.85) and grocery stores (\$9.91) as industries where hikers contribute while recreating in the GMUG. Across all categories, this adds another \$8.4 million to the state’s economy.

Table 5

Economic Visitor Expenditures Outside Study Areas but still within State of Colorado (Estimated 118,800 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	126	\$1.73	4.86	0	20
Sit-down dining	133	\$18.85	46.49	0	200
Grocery Stores	138	\$9.91	26.28	0	200
Gas station food & drink	133	\$0.62	2.36	0	10
Gasoline & oil	137	\$20.53	30.36	0	150
Retail gear	138	\$6.69	33.54	0	300
Retail, non-food	134	\$10.01	22.80	0	100
Rental gear	138	\$0.00	0.00	0	0
Guide service	138	\$0.00	0.00	0	0
Rental Car	138	\$0.00	0.00	0	0
Taxi / Uber / Lyft	138	\$0.00	0.00	0	0
Adventure tourism	137	\$0.00	0.00	0	0
Entertainment	138	\$2.10	13.96	0	120
Hotels, cabins & resorts	138	\$5.07	30.98	0	250
Camping	138	\$0.51	4.57	0	50

Local Resident Expenditures by Study Area

Tables 6A - 6C describe local residents' expenditures as a result to visits to one of the three study areas. Although local resident hikers are not regarded as true economic impact in their local economies, local residents do make a noted contribution to the local economy while visiting the GMUG. Local resident hikers spent an estimated \$5 million annually as a result of visiting the study areas.

Table 6A details local resident hiker average per visit expenditures in Gunnison. There, grocery stores (\$18.57), sit-down dining (\$17.89), and gasoline (\$17.14) are the leading expenditures.

Table 6A

Local Resident Expenditures Per Visit in the Gunnison Study Area (Estimated 19,800 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	36	\$0.97	4.44	0	35
Sit-down dining	38	\$17.89	29.35	0	100
Grocery Stores	38	\$18.57	28.11	0	100
Gas station food	36	\$6.39	23.20	0	100
Gasoline & oil	35	\$117.14	21.53	0	40
Retail gear	36	\$4.58	10.38	0	30
Retail, non-food	37	\$1.62	6.88	0	0
Rental gear	38	\$0.00	0.00	0	0
Guide service	38	\$0.00	0.00	0	0
Rental Car	38	\$0.00	0.00	0	0
Taxi / Uber / Lyft	38	\$0.00	0.00	0	0
Adventure tourism	38	\$0.00	0.00	0	0
Entertainment	38	\$0.39	2.43	0	15
Hotels & resorts	37	\$0.00	0.00	0	0
Camping	39	\$8.65	37.30	0	200

Local Resident Expenditures by Study Area, Continued

Table 6B details the same for the Grand Junction study area. Here, leading expenditures are in gasoline (\$19.94) and sit-down dining (\$14.14).

Table 6B

Local Resident Expenditures Per Visit in the Grand Junction Study Area (Estimated 19,800 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	34	\$4.10	8.20	0	35
Sit-down dining	36	\$14.14	20.61	0	75
Grocery Stores	35	\$7.56	13.86	0	50
Gas station food	34	\$1.39	3.23	0	10
Gasoline & oil	35	\$19.94	25.49	0	100
Retail gear	34	\$3.24	10.65	0	40
Retail, non-food	35	\$2.48	7.24	0	30
Rental gear	35	\$0.00	0.00	0	0
Guide service	35	\$0.00	0.00	0	0
Rental Car	35	\$0.00	0.00	0	0
Taxi / Uber / Lyft	35	\$0.00	0.00	0	0
Adventure tourism	35	\$0.00	0.00	0	0
Entertainment	35	\$0.00	0.00	0	0
Hotels & resorts	37	\$0.00	0.00	0	0
Camping	37	\$0.73	3.11	0	15

Finally, in **Table 6C** are the local resident average per visit expenditures for the Uncompahgre study area. Again, the leading categories are gasoline (\$34.70), sit-down dining (\$22.59), and groceries (\$22.44). Retail gear sales also are high here, at an average expenditure of \$22.81.

Table 6C

Local Resident Expenditures Per Visit in the Uncompahgre Study Area (Estimated 19,800 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	58	\$2.87	9.82	0	50
Sit-down dining	56	\$22.59	47.97	0	250
Grocery Stores	55	\$22.44	42.79	0	200
Gas station food	57	\$1.05	3.33	0	15
Gasoline & oil	57	\$34.70	43.14	0	200
Retail gear	58	\$22.81	95.00	0	500
Retail, non-food	60	\$6.90	21.40	0	100
Rental gear	60	\$0.00	0.00	0	0
Guide service	60	\$0.00	0.00	0	0
Rental Car	60	\$0.00	0.00	0	0
Taxi / Uber / Lyft	60	\$0.00	0.00	0	0
Adventure tourism	60	\$0.00	0.00	0	0
Entertainment	58	\$0.19	1.02	0	6
Hotels & resorts	60	\$11.67	59.21	0	350
Camping	58	\$0.26	1.97	0	15

Local Resident Expenditures Beyond Study Area But Inside State

Local residents also continue to spend funds outside the study area as a result of visits to the GMUG. **Table 7** summarizes these expenditures. As a result of these trips, local residents spent an average of \$40.62 per visit to the GMUG beyond the study areas but within Colorado, totaling an estimated \$2.4 million per year. In this case, expenditures are highest in gasoline (\$11.37), sit-down dining (\$9.76), and groceries (\$8.96).

Table 7

Local Resident Expenditures beyond Study Area but within State of Colorado (Estimated 59,400 Annual Visits)					
<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Fast food	141	\$1.08	6.33	0	50
Sit-down dining	142	\$9.76	40.66	0	300
Grocery Stores	141	\$8.96	34.61	0	300
Gas station food	142	\$0.88	6.02	0	50
Gasoline & oil	141	\$11.37	40.69	0	400
Retail gear	140	\$2.79	14.83	0	125
Rental gear	142	\$4.81	15.75	0	100
Guide service	142	\$0.00	0.00	0	0
Rental Car	142	\$0.00	0.00	0	0
Taxi / Uber / Lyft	142	\$0.00	0.00	0	0
Adventure tourism	142	\$0.00	0.00	0	0
Entertainment	142	\$0.00	0.00	0	0
Hotels & resorts	142	\$0.28	2.65	0	30
Camping	145	\$0.00	0.00	0	0
Retail, non-food	145	\$0.69	5.85	0	50

OMISSIONS & CONSIDERATIONS

During the research process, the research team identified minor issues that should be noted. First, as is always the case with economic impact studies, the findings in this report must be treated as estimations. This economic impact study utilizes mean figures to estimate expenditures that may vary from year to year, visit to visit, event to event, and person to person.

Second, this study does not account for length of visit. As point of reference, visitors in the study indicated staying an average of 4.6 days when staying at least one night.

Third, collecting economic impact data well after the initial day of expenditures can result in unavoidable errors in data collection. For examples, respondents rounding expenditures to the nearest dollar, forgetting expenditures, or misstating expenditures are common issues. As such, the research team recommends repeating this study by collecting data in the field at or around the day expenditures are made.

Fourth, this study uses generalized categories (e.g. hikers) to account for expenditures across more than one form of outdoor recreation. Individual outdoor recreation types may have unique spending patterns that are lost in aggregated data. The researchers suggest conducting future field studies on separate outdoor recreation categories to create a more nuanced economic estimate.

Fifth, NVUM visitation estimates are unable to account for every single visit that occurs into a particular area or study area. Outdoor recreation is particularly easy to undercount as outdoor recreation users are often less visible or in remote areas of a national forest.

Sixth, NVUM classification of visitor use includes generalized uses which may cause inflation in the actual number of visits for the use being studied. As well, NVUM data allow for recreational users to visit the GMUG for more than one purpose. As such, persons and expenditures represented in this study may also overlap with other user groups' economic contributions.

Seventh, the estimates in this report look to account for approximately 95% of visitors to the GMUG in a given year by focusing on the major areas of use. This may result in underreporting users of areas not included in the report.