

**The Economic Significance and Impacts of
West Virginia's State Parks and Forests**



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This economic impact study relied upon park revenue, payroll, and visitation data provided by administrators at West Virginia's Division of Natural Resources.

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EXECUTIVE SUMMARY

Since the 1920's West Virginia State Parks and Forests have been an oasis for recreation, relaxation, and rejuvenation for millions of visitors. The West Virginia system is comprised of ten lodge / resort state parks, twenty-six cabin, camping and day use state parks, two rail trails, and eight state forests (See map contained in Appendix A). This diverse range of offerings enables a rich set of activities and amenities for visitors. Activities ranging from bicycling to birding, from gaga ball to geocaching, from Segway riding to skiing, can be found in this vast network of unique and picturesque locations.

As one might imagine, the millions of visitors attracted annually to West Virginia State Parks and Forests spawn a large amount of economic activity throughout the State. The West Virginia Division of Natural Resources has called for an updated economic significance and impact study based upon fiscal year 2014-2015 [referred to in this report as FY15] revenue data. A previous study was conducted nearly two decades ago: it was released in 1998 using data from the FY97 fiscal year (gai consultants, 1998). Parks, visitors, and economic conditions have changed significantly over the past two decades giving rise for the need for the updated study detailed in this report. A summary of key findings of this study are as follows:

- In FY15, West Virginia State Parks and Forests attracted 7.1 million visitors who spent \$226.5 million throughout the state during these trips. Approximately, 46 percent [\$103.6 million] of this spending was by out-of-state visitors.
- The total economic significance of West Virginia State Parks and Forests during FY15 was between \$213.4 million and \$248.7 million. Economic significance is a measure of all economic activity attributed to park visitors.
- The total economic impact of West Virginia State Parks and Forests during FY15 was between \$160.5 million and \$189.5 million. Economic impact is a measure of fresh money infused into the state's economy that likely would have not be generated in the absence of the park system.
- In FY15, for every \$1 of general tax revenue provided to State Parks, \$13.15 on average was generated in fresh money that wouldn't be there if not for the operation of State Parks and Forests.
- Regarding employment, the economic activity stimulated by visitation to West Virginia State Parks and Forests supported approximately 3,209 full-time equivalent jobs in the state in FY15.

- In terms of wages and income, the economic activity spawned by visitation to West Virginia State Parks and Forests was responsible for roughly \$91.6 million in wage and salary income in FY15.
- Economic activity stimulated by visitation to West Virginia State Parks and Forests was associated with approximately \$140.9 million in value added effects which is a measure of the park system's contribution to the gross domestic product of the state.
- Outside of the park system, the sectors of the West Virginia economy that capture the most visitor spending are lodging accommodations and restaurant/bars.
- Visitor spending attributed to the four park categories are estimated as follows:
 - Lodge and Resort State Parks (10 areas): \$118.6 million in spending
 - Cabin, Camping, and Day Use State Parks (26 areas): \$74.3 million in spending
 - Rail Trails (2 areas): \$10.1 million in spending
 - State Forests (6 areas): \$23.6 million in spending
- Economic significance (a.k.a. economic activity) and economic impacts are also calculated for each park location:

For instance, Blackwater Falls attracted 855,085 visitors, spending \$25.6 million in West Virginia during their visits. The estimated contribution to the economy was \$20.5 million in economic impact.

In terms of visitor spending, locations stimulating the largest amounts of spending in FY15 were Blackwater Falls, Pipestem, and Stonewall. With regarding to economic impact, these three locations also produced the highest levels.

1. INTRODUCTION

In West Virginia, tourism is big business. It has been estimated that tourism spending in West Virginia increased by 6.3 percent per year between 2000 and 2012 [3.3 percent per year when adjusted for inflation] (Runyan, 2013). In the State, the combined spending by overnight and day visitors was \$5.1 billion in 2012 which equates to roughly \$13.9 million dollars per day (Runyan, 2013). Thus, the question surfaces as to what portion of the State's tourism revenues can be attributed to visitors to State Parks and Forests?

This study estimates the economic significance and impacts that West Virginia State Parks and Forests have on the West Virginia State economy. Specific objectives include:

- Assessing the direct and secondary economic impacts of West Virginia State Parks and Forests on a state-wide level;
- Measuring the direct and secondary economic impacts of West Virginia State Parks and Forests within each of the four park categories (see Appendix A):
 - Lodge and Resort State Parks
 - Cabin, Camping, and Day Use State Parks
 - Rail Trails
 - State Forests
- Estimating the direct and secondary economic impacts of each specific park;
- Identifying economic benefits derived from non-residents of West Virginia; and
- Estimating economic impacts derived from both day-user and overnight-user groups.

Achieving the above objectives, the study details the distribution of travel and recreational impacts of West Virginia State Parks and Forests among the four park categories. The secondary economic impact items referred to above include indirect effects such as job creation and revenues brought into travel-related businesses. Secondary effects also include induced outcomes such as the increased spending power of those working in tourism, recreation, and supporting industries. Measuring the combined direct and secondary impacts yields a 'value-added' estimate of West Virginia State Parks to the State's economy.

To achieve the above objectives, the next section of this report describes the research procedures employed in this study. Subsequently, the study results are presented. Like any study, this research is subject to limitations which are also included herein. The report ends with a brief conclusion section that summarizes key finding and also addresses some societal benefits provided by West Virginia State Parks and Forests that cannot be included in econometric input-output modeling, but are worthy of discussion.

Lastly, it is prudent to note in this introduction section that a glossary of economic impact terminology is included in Appendix B of this report.

2. METHODS

2.1 Direct Impact Measurement

Estimating direct visitor spending was accomplished by incorporating primary and secondary data sources.

With regard to primary data collection, the visitor spending survey contained in Appendix C of this report was administered at all locations. As can be seen on the survey, the goal was to collect information about spending that occurred on a visitor's trip inside the State of West Virginia, but outside of the park location. As seen in Appendix C, the survey inquired about spending in numerous categories such as restaurant, grocery, transportation, souvenirs, etc... Park managers and staff were instructed to ask a representative sampling of their park's visitors to visit the survey URL to complete the brief economic impact survey. A total of 851 completed responses were generated. This sample size is more than adequate for a spending profiling survey. That is, the accepted benchmark is to have at least 50 respondents per user category [the nine user categories are listed in Table 1] (Stynes et al., 2000). Responses in this study's user categories range from 56 to 181 with a mean category size of 94.5. Thus, even the smallest category size of 56 exceeds the standard benchmark by 11 percent.

The primary data collected through surveying was considered in conjunction with secondary data sources. Specifically, existing spending averages from comparable state park systems were also used to aid in interpreting this study's spending profile survey results. The practice of considering spending information from comparable state park systems is consistent with other state park economic impact studies (e.g. Mowen et al., 2012). It is worth noting that the structure of the spending survey results generated in this study were consistent with spending structures in other state park economic impact studies and no adjustments were made to this study's survey results as a result of benchmarking against other park systems.

In addition to spending outside the parks, the direct impact measurement evidently must also include visitor spending within the parks. Thus, the direct impacts inside the parks were calculated using park revenue reports.

2.2 Secondary Impact Measurement

As well as measuring the direct effects of visitor spending, this study also calculated secondary effects which comprise economic activity from subsequent rounds of re-spending of visitor dollars. There are two types of secondary effects: indirect and induced. Indirect effects describe the changes in sales, income and jobs to businesses that supply goods and services to the park location (Stynes et al., 2000). Induced effects entail the changes in economic activity in the region stimulated by household spending of income earned through direct and indirect effects of visitor spending.

Secondary spending is calculated through the use of multipliers. Multipliers reflect the degree of interdependency between sectors in a region's economy and can vary substantially across regions and sectors (Stynes et al., 2000). As an illustration: if the multiplier for the hotel sector in a given region is 1.67 then it can be estimated that every dollar spent at a hotel results in 67 cents of secondary economic activity in the region. Economic multipliers for each county in West Virginia are commercially available in an economic impact estimation software titled IMPLAN commercialized by MIG, Inc. Therefore, the most recent IMPLAN multipliers were purchased and used in this study to calculate secondary economic impacts. Used by more than 1,000 entities, IMPLAN is said to be the most widely adopted regional economic analysis software in the industry for calculating indirect and induced economic effects (Dougherty, 2011).

To augment the IMPLAN software that was included with the purchase of the IMPLAN multipliers, a second economic impact software program was also used to calculate secondary economic impacts: MGM2. Money Generation Model (MGM2) was originally developed for use by the National Park Service by the late Michigan State University Professor Daniel Stynes and his colleagues. It is a computer based input-output economic modeling system specifically designed for modeling impacts of park and recreational settings. Moreover, IMPLAN multipliers can be inserted into MGM2 modeling which is a capability that is particularly useful for the current study.

2.3 Visitation Measurement

Park attendance counts were provided to the researchers by administrators at WV State Parks. The attendance counting practices used in West Virginia are in concert with accepted guidelines in the U.S. recreational park industry (see for example: America's Byways Resource Center 2010; Bezies, et al., 2011). That is, automated vehicle counting technology is utilized at park entry points and staff are stationed at those entry points on random days/times to count the

number of occupants per vehicle to develop and refine estimation formulas. Service vehicle traffic and park re-entry traffic are both deducted from the figures generated by the counting technology.

Because of the numerous entry / exit points, WV State Park administrators were unable to provide attendance estimates for the two Rail Trails [Greenbrier River Trail and North Bend Rail Trail]. Virginia's State Park system, however, also has two rail trails for which attendance figures are publicly available. One of Virginia's Rail Trails, the New River Trail, hosted 1,011,905 visitors in 2014; Virginia State Park's other Rail Trail, the High Bridge Trail, hosted 203,058 visitors in 2014. Therefore, in an effort to remain on the conservative side of estimation procedures, the attendance at both of West Virginia's Rail Trails was each equated to the lowest volume trail in Virginia [203,058] in order to complete the economic modeling for this study.

Lastly, with regard to attendance estimation, one of West Virginia's State Forests, the Calvin Price Forest, is not included in this study. Attendance is not monitored in this forest because visitation is known to be very low. There are some campers and hunters, but not many due to factors such as the 14 inch antler limit on deer. When making estimations and assumptions in economic modeling it is best practice to error on the conservative side of estimation; thus, rather than guess-estimating this low attendance, it is not included in the current study.

2.4 Measuring Economic Significance vs. Economic Impact

Various studies take different approaches to estimating economic impact. Some studies, for example, include all park visitor spending as economic impact. The researchers conducting this current study adhere to the school of thought that true economic impact can only be calculated using the "fresh money" flowing into an area as opposed to including spending by the local residents of the area. Therefore, this current study offers results compartmentalized according to the following two categories:

Economic significance – includes all visitor spending and consequent multiplier effects by both locals and non-locals. Consequently, economic significance figures represent all of the economic activity stimulated by a park location.

Economic impact – includes spending and consequent multiplier effects by 1) in-state residents traveling more than 50 miles one-way to visit the park; and 2) all out-of-state visitors. Thus, economic impact figures reflect all of the "fresh money" entering an economy as a result of a given state park.

3. RESULTS

This section of the report contains the results of economic significance and economic impact analyses. First, visitor spending results are presented and interpreted. Spending results are compartmentalized with regard to significance and impact. Second, statewide results are presented in detail. Third, results are presented according to location-type [lodge / resort, state park, trail, forest]. Lastly, park-by-park results are offered.

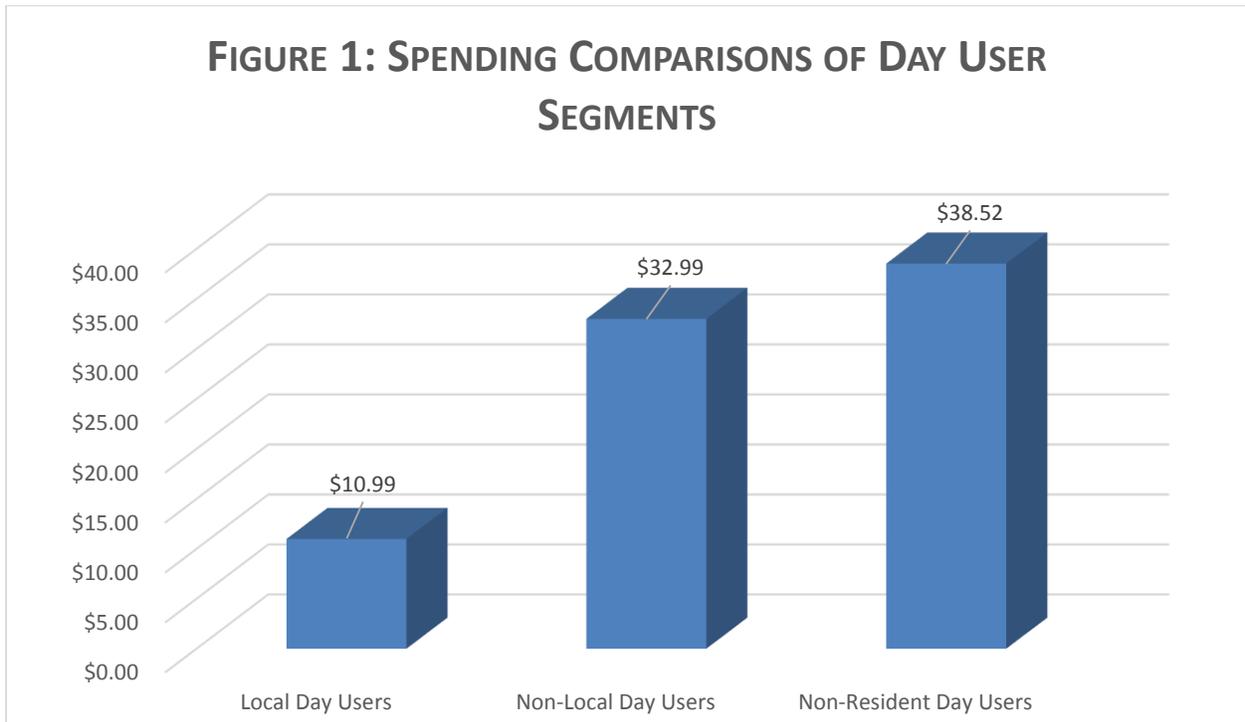
3.1 Visitor Spending

Table 1 lists the spending profiles for each visitor segment. The spending profiles in Table 1 and throughout this report represent total spending by segment: spending both inside and outside the park. That is, the visitor revenues collected by West Virginia State Parks in FY15 [\$21,394,771]

TABLE 1: AVERAGE VISITOR SPENDING: PROFILES BY SEGMENT (PER PARK DAY)									
DAY USERS				OVERNIGHT USERS					
Spending Category	Local Day User	Non-Local Day User	Non-Resident Day User	Lodge Resident	Cabin Resident	Camping Resident	Lodge Non-Resident	Cabin Non-Resident	Camping Non-Resident
Hotels, motels, cabins and B&B	\$3.94	\$31.93	\$46.65	\$264.88	\$219.43	\$6.18	\$286.02	\$243.06	\$13.41
Camping fees and Charges	\$0.02	\$0.25	\$2.12	\$1.70	\$1.96	\$40.83	\$0.62	\$5.53	\$33.05
Restaurants and bars	\$7.96	\$17.23	\$27.52	\$87.11	\$28.15	\$13.50	\$92.68	\$36.50	\$25.24
Groceries and convenience items	\$6.44	\$12.59	\$12.36	\$13.67	\$44.16	\$39.34	\$13.46	\$44.29	\$31.48
Gas and Oil (auto, RV, boat, etc...)	\$5.30	\$12.82	\$13.22	\$19.72	\$23.23	\$24.19	\$17.36	\$20.14	\$19.22
Other Transportation expenses	\$4.23	\$4.44	\$4.09	\$5.11	\$5.34	\$3.92	\$4.32	\$9.92	\$1.00
Clothing	\$1.88	\$4.72	\$2.91	\$4.96	\$7.04	\$4.26	\$5.27	\$5.02	\$2.96
Sporting goods	\$3.70	\$18.40	\$2.33	\$2.94	\$9.32	\$9.54	\$4.28	\$2.72	\$3.08
Souvenirs and other expenditures	\$4.00	\$10.11	\$20.14	\$57.22	\$51.68	\$45.11	\$71.66	\$64.19	\$41.62
OVERALL PER PARTY:	\$37.47	\$112.49	\$131.34	\$457.31	\$390.31	\$186.87	\$495.67	\$431.37	\$171.06
OVERALL PER VISITOR:	\$10.99	\$32.99	\$38.52	\$134.11	\$114.46	\$54.80	\$145.36	\$126.50	\$50.16

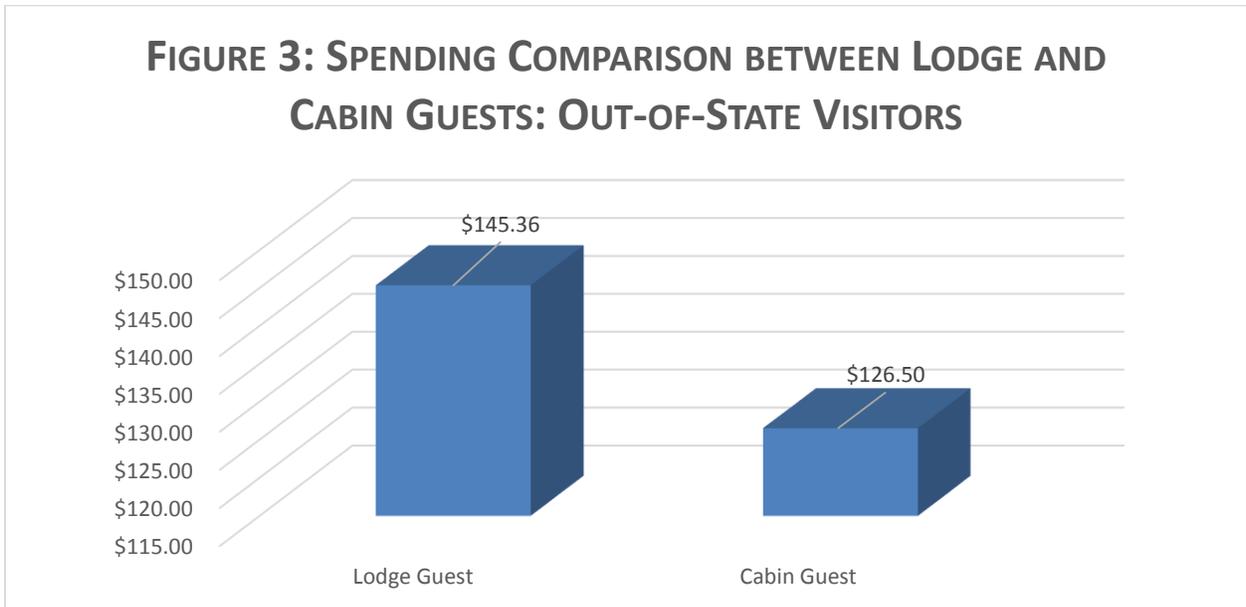
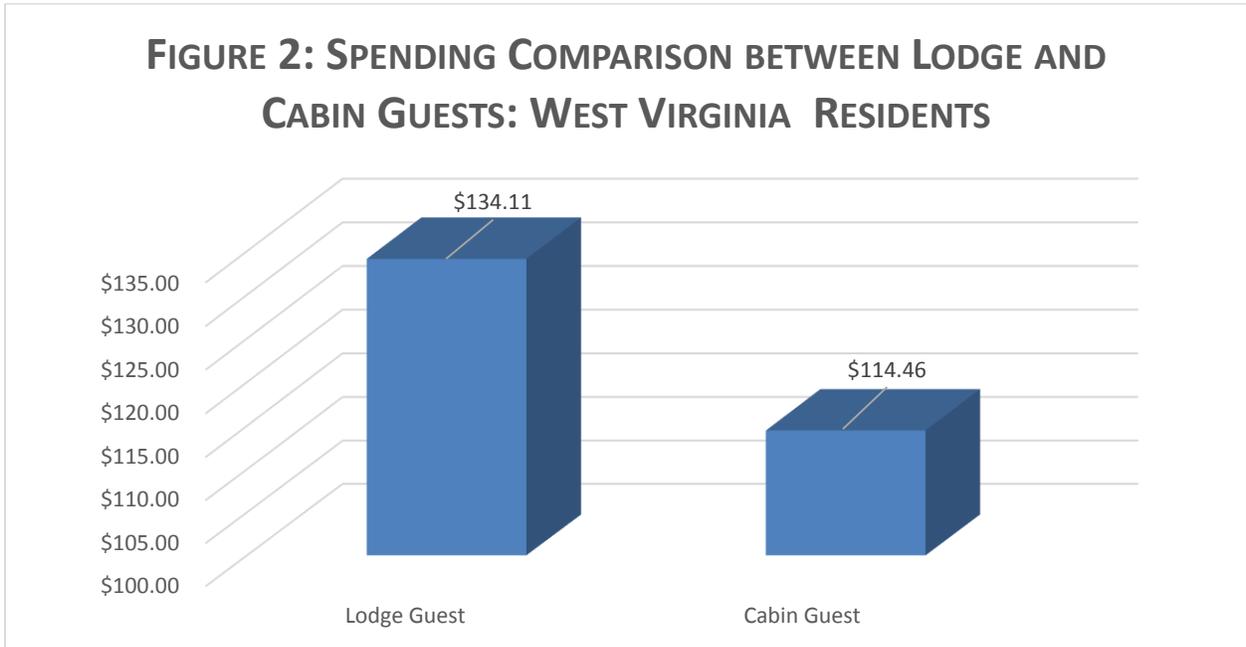
and by 3rd party contractors in FY15 [\$30,201,641] were added to the out-of-park spending data gathered in the surveying to develop the spending profiles listed in Table 1. The average expenditures per day / per visitor range from \$10.99 for local day users to as high as \$145.36 for non-resident lodge guests.

Most of the profiles in Table 1, and the relative weights among them, are what one might expect. There are, however, some marketing-relevant points to note. As further detailed in Figure 1, non-resident day users spend more money than non-local resident day users. While a non-local day user and a non-resident day user, on average, travel the same distance to visit a park, the non-resident spends more on restaurants and souvenirs. While further research would be warranted to explain these differences in consumer behaviors, it appears that when a park visitor crosses a state line then s/he has a greater desire to try restaurants and to purchase souvenirs during the excursion in comparison to someone who does not leave his/her home state.



An additional spending-related result is depicted in Figures 2 and 3. Specifically, lodge guests spend significantly more in the West Virginia economy than do cabin guests. As seen in Figures

2 and 3, this difference applies to both in-state patrons and out-of-state patrons. As seen in Table 1, this difference is driven by both accommodations spending and restaurant spending.



Upon constructing spending profiles for each of the nine visitor segments, the next step in the economic modeling was to pair those spending profiles with the visitation data in order to generate segment-by-segment spending figures. The outcomes of this stage of the modeling are listed in Table 2. In FY15, day users spent \$160.8 million in West Virginia and overnight users spent \$44.5 million (see Table 2).

TABLE 2: VISITOR SPENDING USED TO COMPUTE ECONOMIC SIGNIFICANCE				
Segment	Total Visitors	%	Total Spending	%
		% Day Users		% Day Users
Local Day User	2,795,989	44%	\$30,727,919	19%
Non-local Day User	1,842,811	29%	\$60,794,335	39%
Non-resident Day User	1,715,721	27%	\$66,089,573	42%
Day User Subtotal	6,354,521	100%	\$157,611,827	100%
		% Overnight Users		% Overnight Users
Lodge Resident	103,273	15%	\$13,849,942	20%
Cabin Resident	52,051	7%	\$5,957,757	9%
Camping Resident	211,493	31%	\$11,589,816	17%
Lodge Non-Resident	127,583	18%	\$18,545,465	27%
Cabin Non-Resident	115,090	16%	\$14,558,885	21%
Camping Non-Resident	88,387	13%	\$4,433,492	6%
Overnight User Subtotal	697,877	100%	\$68,935,358	100%
Grand Totals	7,052,398		\$226,547,185	

As explained in Section 2.4 of this report, true economic impact includes only “fresh money” entering a given economy. Therefore, West Virginia State residents living within 50 miles of the park that they visited were removed from the calculations that were used to derive the results presented in Table 3. As seen in Table 3, the modeling for economic impact makes a 12% deduction of the spending amount termed ‘non-primary user deduction.’ In a marketing research study conducted on West Virginia state park patrons in 2015 it was found that 24% of visitors do not consider the park their primary destination – the park is one component of a larger trip (Magnini and Uysal, 2015). This economic impact study makes the assumption that one-half of those non-primary destination visitors – 12% of total visitors – might have spent money in the

West Virginia economy if the park would not have existed. This is the rationale used in making the 12% non-primary user deduction. Many publicly available state park economic impact studies do not appear to make non-primary user deductions (e.g. Dougherty, 2011; Mowen et al, 2012), but the current study aims to produce economic impact estimates of the money stimulated by the park system that are as accurate as possible within the constraints of such modeling.

In FY15, day users living more than 50 miles away, or living out-of-state, spent \$126.9 million in West Virginia and overnight users living more than 50 miles away, or living out-of-state, spent \$62.6 million (see Table 3).

To summarize: The results contained in Table 2 will be used to compute economic significance; the results listed in Table 3 will be used to calculate economic impact.

TABLE 3: VISITOR SPENDING USED TO COMPUTE ECONOMIC IMPACT			
Segment	Total Visitors	Impact %	Total Spending
Local Day User	2,795,989	0%	\$0
Non-local Day User	1,842,811	100%	\$60,794,338
Non-Resident Day User	1,715,721	100%	\$66,089,560
Day User Subtotal	6,354,521		\$126,883,898
Lodge Resident	103,273	82%	\$11,356,952
Cabin Resident	52,051	80%	\$4,766,206
Camping Resident	211,493	77%	\$8,924,159
Lodge Non-resident	127,583	100%	\$18,545,465
Cabin Non-resident	115,090	100%	\$14,558,885
Camping Non-resident	88,387	100%	\$4,433,492
Overnight User Subtotals	697,877		\$62,585,159
Non-Primary User Deduction			-12%
Grand Totals	7,052,398		\$166,732,770

3.2 Statewide Results

This section [and subsections] includes the results of this study from a statewide perspective [as opposed to a location category or park-by-park perspective]. As previously noted, while the investigators of this study have made their best effort to define and explain economic-related terms throughout, they have also added a glossary of terms in Appendix B that can be used to clarify items when needed.

3.2.1 Statewide Economic Significance

Table 4 provides the results of economic significance figures using statewide economic multipliers by nine spending segments as “industries” with respect to related direct and secondary sales generated, jobs created, income and value added. This detail in Table 4 reveals the relative magnitude of influence that the spending categories have in the West Virginia economy.

The second column in Table 4 represents **Sales** that are the sales of firms – businesses within the State that sell products or services as a result of park visitation. The study showed that 72 percent of sales accrue to the State as direct sales. The majority of the direct effects usually accrue to hotels-motels-cabins-B&B or lodging, restaurant and bars, and camping fees and charges. The third column in Table 4 provides the number of **Jobs** created in the State as a result of visitor spending. The fourth column in Table 4 gives **Labor income** which includes wages and salaries, proprietor’s income and employee benefits. The last column in Table 4, **Value Added**, represents a commonly used measure of the contribution of an industry (West Virginia State Parks and Forests - Spending categories) to gross state product. This implies that it is ‘value added’ by West Virginia State Parks and Forests to the final good or service being produced in the State.

Using statewide economic multipliers, the overall contribution of park visitors to the West Virginia Economy is:

- \$248.6 million in sales
- 3,209 jobs
- \$91.6 million in wage and salary income
- \$140.9 million in value added effects

Table 4 shows that direct effects are \$62.7 million in wage / salary income and 2,494 jobs. It is important to note that these jobs are not full time jobs, but full time equivalents including part time and seasonal jobs. The \$159.8 million in direct sales generates another \$88.7 million in

secondary sales for a total sales effect of \$248.7 million. An additional 715 jobs and \$28.8 million in wages/salaries are supported through secondary effects as park visitor spending circulates in the State of West Virginia. The last two columns in Table 5 lists both Type I and Type II multiplier coefficients of economic significance that were generated from IMPLAN for the State as a whole.

TABLE 4: STATEWIDE ECONOMIC SIGNIFICANCE OF VISITOR SPENDING				
Sector/Spending Category – Direct Effects	Sales	Jobs	Labor Income	Value added
Hotels, motels, cabins and B&B	\$73,706,772	762	\$26,292,526	\$44,746,739
Camping fees and charges	\$4,959,728	82	\$1,783,986	\$2,804,663
Restaurants and bars	\$38,835,418	835	\$15,694,425	\$18,540,138
Groceries and convenience items	\$6,904,491	107	\$2,928,640	\$4,463,732
Gas and oil (auto, RV, boat, etc...)	\$2,405,638	36	\$998,740	\$1,461,707
Other transportation expenses	\$9,062,861	116	\$4,810,336	\$5,465,814
Clothing	\$3,058,856	41	\$812,813	\$1,748,280
Sporting goods	\$6,422,283	118	\$2,360,435	\$3,880,918
Souvenirs and other expenditures	\$13,763,506	392	\$6,776,863	\$8,277,950
+Capital Improvements	\$771,466	4	\$312,228	\$318,936
Total direct effects	\$159,891,020	2,494	\$62,770,993	\$91,708,879
Secondary effects	\$88,782,163	715	\$28,809,588	\$49,201,735
Total effects	\$248,673,183	3,209	\$91,580,580	\$140,910,614

+While this category is not ‘visitor spending’ it does generate economic activity. Included here is money spent on capital improvements in FYI 2015 [not the total value of the project, just the amount spent in the given fiscal year].

TABLE 5: STATEWIDE ECONOMIC SIGNIFICANCE OF VISITOR SPENDING SUMMARY FIGURES AND MULTIPLIERS

Category	Direct	Indirect	Induced	Total impact	Multiplier Type I	Multiplier Type II
Sales – output	\$159,891,020	\$40,295,912	\$48,486,251	\$248,673,183	1.25	1.56
Employment	2,494	305	410	3,209	1.12	1.29
Labor income	\$62,770,993	\$13,122,782	\$15,686,806	\$91,580,580	1.21	1.46
Value added	\$91,708,879	\$21,419,206	\$27,782,529	\$140,910,614	1.23	1.54

Note: Type I Multiplier = (Direct Effect + Indirect Effect) / Direct Effect
 Type II Multiplier = (Direct Effect + Indirect Effect + Induced Effect) / Direct Effect

3.2.2 Statewide Economic Impact

Table 6 provides the results of economic impact figures using statewide economic multipliers by nine spending segments as “industries” with respect to related direct and secondary sales generated, jobs created, income and value added. As described previously in this report, these figures were generated by omitting State residences who live within a 50 mile radius of the park. This detail reveals which spending categories contribute most to the West Virginia economy. The study showed that 73 percent of sales accrues to the State as direct sales. The majority of the direct effects usually accrue to hotels-motels-cabins-B&B or lodging, restaurant and bars, and camping fees and charges. As seen in Tables 6 & 7 the sales impact using statewide economic multipliers was \$189.5 million, total jobs created were 2,412, labor income was \$68.4 million, and value added contributions were \$107.5 million. Table 7 offers a summary of visitor spending and multipliers for the economic impact of visitor spending. The final two columns in this Table provides both Type I and Type II multiplier coefficients of economic impact that were generated from IMPLAN for the State as a whole.

TABLE 6: STATEWIDE ECONOMIC IMPACT OF VISITOR SPENDING				
Sector/Spending Category – Direct Effects	Sales	Jobs	Labor Income	Value added
Hotels, motels, cabins and B&B	\$61,640,136	637	\$21,988,141	\$37,421,190
Camping fees and charges	\$3,529,854	58	\$1,269,668	\$1,996,087
Restaurants and bars	\$28,044,679	603	\$11,333,601	\$13,388,609
Groceries and convenience items	\$4,568,771	71	\$1,937,911	\$2,953,697
Gas and oil (auto, RV, boat, etc...)	\$1,655,556	24	\$687,330	\$1,005,942
Other transportation expenses	\$4,918,399	63	\$2,610,561	\$2,966,288
Clothing	\$2,045,567	28	\$543,557	\$1,169,138
Sporting goods	\$4,486,771	82	\$1,649,060	\$2,711,309
Souvenirs and other expenditures	\$10,370,449	296	\$5,107,021	\$6,237,838
+Capital Improvements	\$771,466	4	\$312,228	\$318,936
Total direct effects	\$122,031,648	1867	\$47,439,079	\$70,169,035
Secondary	\$67,517,874	545	\$21,939,315	\$37,326,734
Total effects	\$189,549,522	2412	\$69,378,394	\$107,495,769

+While this category is not ‘visitor spending’ it does produce economic impact. Included here is money spent on capital improvements in FYI 2015 [not the total value of the project, just the amount spent in the given fiscal year].

TABLE 7: STATEWIDE ECONOMIC IMPACT OF VISITOR SPENDING SUMMARY FIGURES AND MULTIPLIERS						
Category	Direct	Indirect	Induced	Total impact	Multiplier Type I	Multiplier Type II
Sales – output	\$122,031,648	\$30,794,715	\$36,723,159	\$189,549,522	1.26	1.56
Employment	1867	234	311	2412	1.12	1.29
Labor income	\$47,439,079	\$10,058,090	\$11,881,225	\$69,378,394	1.22	1.47
Value added	\$70,169,035	\$16,284,361	\$21,042,374	\$107,495,769	1.24	1.5

Note: Type I Multiplier = (Direct Effect + Indirect Effect) / Direct Effect

Type II Multiplier = (Direct Effect + Indirect Effect + Induced Effect) / Direct Effect

3.2.3 Comparison Statewide Economic Significance and Impact

Comparisons between the visitor spending categories including local residents [economic significance] and excluding local residents [economic impact] are visually depicted in Figures 4 and 5. The overall proportions of the nine categories remain relatively consistent between the two models. The largest deviation between the two models is the *other transportation* expense category: the economic impact amount is 54 percent of the total economic significance amount. The comparisons illustrated in Figures 4 and 5 are useful in demonstrating that local residents stimulate economic activity in all sectors of the modeling when they visit their local state parks.

Figure 4: Visitor Spending Categories according to Significance and Impact

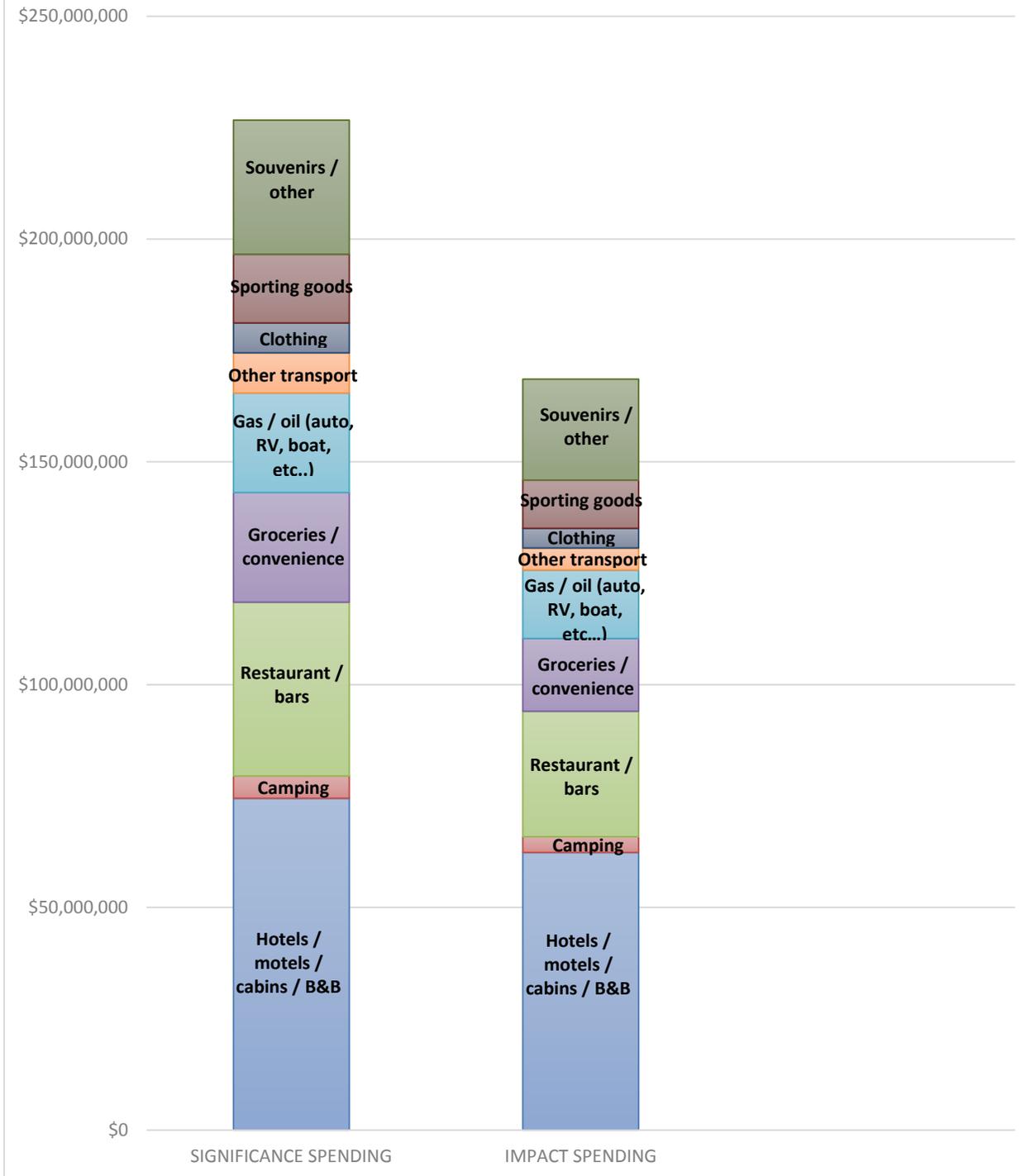
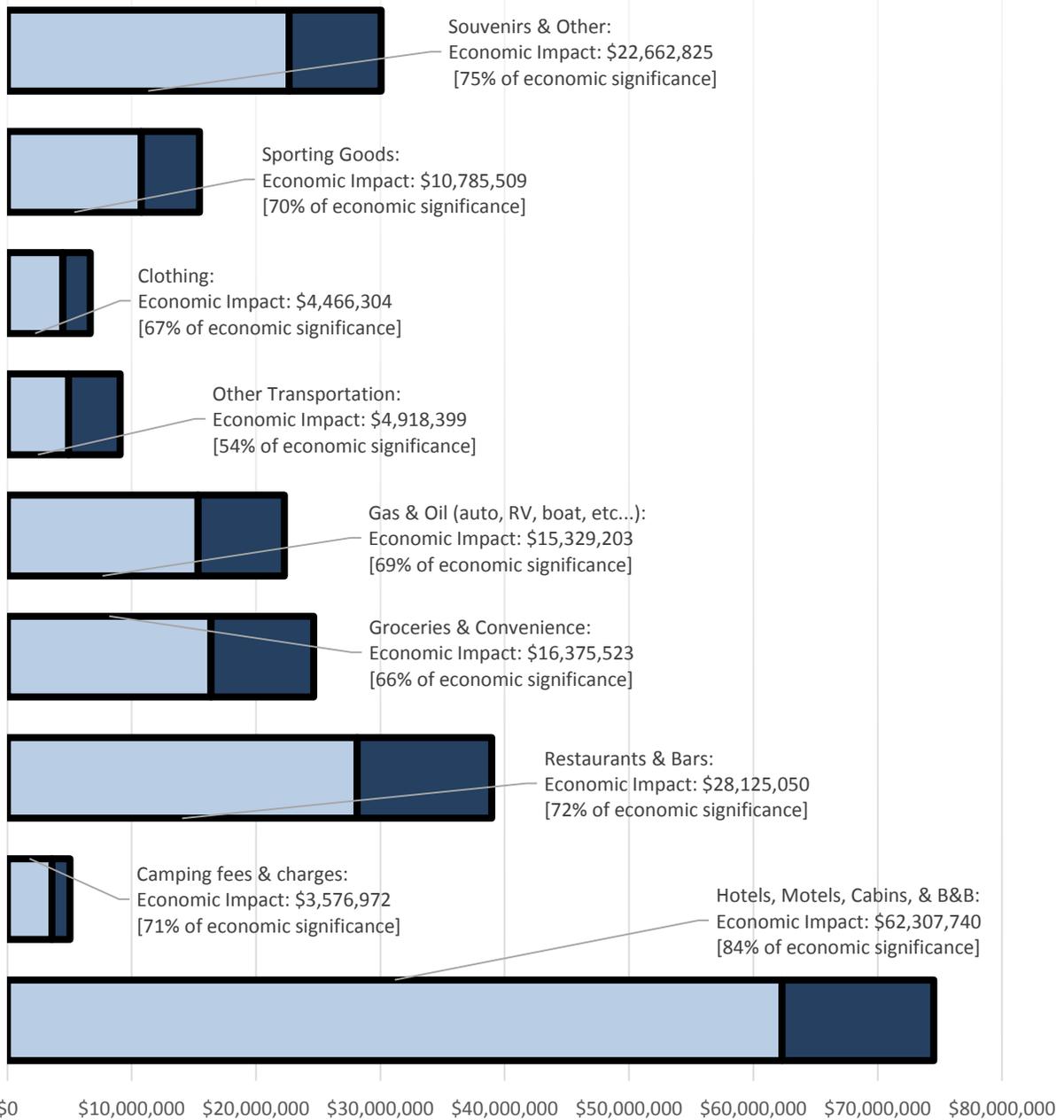


FIGURE 5: WITHIN CATEGORY COMPARISONS OF ECONOMIC SIGNIFICANCE VS. ECONOMIC IMPACT



3.3 Attraction Category Results

The study's results are detailed according to location category in Table 8. Not surprising, lodge and resort state parks stimulate the most visitor spending [\$118.6 million] followed by cabin, camping, and day use state parks [\$74.3 million]. As indicated in Table 8, approximately 54 percent [\$122.9 million] of total visitor spending comes from West Virginia residents and roughly 46 percent [\$103.7 million] derives from out-of-state visitors. In terms of the ratio between day use spending and overnight spending, 70 percent [\$157.6 million] of total spending is by day users, whereas, overnight users account for 30 percent [\$69 million] of total spending.

Also in terms of total visitor spending, it is prudent to note that the total visitor spending reported in Table 8 is \$226,646,610, whereas the total visitor spending reported in Table 2 was \$226,547,185. The slight difference between these two figures does not represent a typo or reporting error. The total visitor spending in Table 2 was computed with a different econometric approach independent of the econometric approach used to compute the amount reported in Table 8. The two independent approaches were utilized as a means of cross-validating the total figure. The fact that both approaches yielded final results less than 0.001 percent different from each other serves as validation that the spending figure is highly accurate. Thus, it can be confidently stated that visitors to West Virginia State Parks and Forests spent a total of \$226.6 million dollars within the State during FY15.

It is also important to note that the economic significance figures and the economic impact figures are lower in Table 8 than reported in Tables 4-7. These differences are driven by the fact that the amounts reported earlier in the report were derived using statewide economic multipliers whereas the figures reported in the location category Table (Table 8) and in the park-by-park Tables (Tables 9-12) incorporated county-level economic multipliers. Incorporating county-level economic multipliers reduces the total figures because many West Virginia State Parks and Forests are located in counties with low levels of economic activity. Consequently, the appropriate means of reporting statewide economic significance and the statewide economic impact would be through the use of ranges:

- The total economic significance of West Virginia State Parks and Forests during FY15 was between \$213.4 million and \$248.7 million.
- The total economic impact of West Virginia State Parks and Forests during FY15 was between \$160.5 million and \$189.5 million.

**TABLE 8:
SPENDING PROFILES BY PARK LOCATION CATEGORY**

TYPE	TOTAL PARTY DAYS /NIGHTS	DAY USER SPENDING	OVERNIGHT USER SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING	ECONOMIC SIGNIFICANCE	ECONOMIC IMPACT
Lodge & Resort State Parks	\$3,232,328	\$69,759,455	\$48,846,619	\$60,555,245	\$58,050,819	\$118,606,062	\$117,192,969	\$91,029,719
Cabin, Camping, & Day Use State Parks	\$2,530,534	\$56,595,829	\$17,731,842	\$43,146,084	\$31,181,593	\$74,327,674	\$65,161,154	\$46,926,596
Rail Trails	\$406,116	\$10,071,998	\$0	\$5,848,654	\$4,223,344	\$10,071,998	\$9,165,518	\$6,564,635
State Forests	\$884,320	\$21,169,883	\$2,470,995	\$13,361,760	\$10,279,115	\$23,640,876	\$21,875,038	\$15,939,946
TOTAL	\$7,053,298	\$157,597,165	\$69,049,456	\$122,911,743	\$103,734,871	\$226,646,610	\$213,394,679	\$160,460,896

3.4 Park-Specific Results

Visitor spending for each park is reported in Tables 9-12. As previously specified in this report, the economic significance and economic impact effects in this section were computed using county-level multipliers. If a park is located in two counties, then both counties were used to calculate the model. In some cases, for example in the cases of the two rail trails, several counties were incorporated into the modeling.

Blackwater Falls Park stimulated the most spending [\$25.6 million] around the State of West Virginia. Stonewall Resort Park generated the most spending by overnight guests [\$11.4 million] followed by Pipestem Resort [\$8.6 million]. In terms of spending by out-of-state residents, Blackwater Falls led [\$12.5 million] and was followed by Pipestem [\$8.6 million].

With regard to parks without lodges, the locations associated with the highest levels of visitor spending were Watoga [\$7.8 million] and Beech Fork [\$7.3 million] (see Table 10). Moreover, the State’s two rail-trail projects have proven to be worthwhile projects: both the Greenbrier River Trail and the North Bend Trail each generated an estimated \$5 million in visitor spending

in FY15 (see Table 11). Lastly, Table 12 focuses on the State's forests. The leaders with regard to visitor spending are Kanwha [\$7.4 million] and Coopers Rock [\$7.1 million].

TABLE 9: LODGE / RESORT STATE PARKS SPENDING TOTALS BY PARK AND SEGMENT								
LODGE / RESORT STATE PARKS	TOTAL PARTY DAYS /NIGHTS	DAY USER SPENDING	OVERNIGHT USER SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING	ECONOMIC SIG-NIFICANCE	ECONOMIC IMPACT
Blackwater Falls	855,085	\$19,936,067	\$5,706,626	\$13,171,536	\$12,471,157	\$25,642,693	\$25,386,266	\$20,533,747
Cacapon	240,902	\$5,185,920	\$4,277,605	\$3,423,267	\$6,040,258	\$9,463,525	\$11,072,324	\$9,064,513
Canaan Valley	274,995	\$5,124,067	\$8,499,230	\$6,884,595	\$6,738,702	\$13,623,296	\$14,031,995	\$10,833,509
Chief Logan	418,012	\$9,982,899	\$1,768,156	\$6,617,760	\$5,133,285	\$11,751,045	\$10,458,430	\$7,699,671
Hawks Nest	327,139	\$7,820,012	\$1,685,692	\$4,938,056	\$4,567,648	\$9,505,704	\$8,269,962	\$6,125,302
North Bend	183,113	\$3,782,245	\$2,756,064	\$3,635,679	\$2,902,630	\$6,538,309	\$3,530,687	\$2,459,654
Pipestem	344,283	\$6,665,188	\$8,648,483	\$6,256,664	\$9,057,007	\$15,313,671	\$17,763,858	\$13,991,652
Stonewall	193,429	\$2,296,405	\$11,417,430	\$8,925,037	\$4,788,798	\$13,713,834	\$15,770,910	\$12,191,104
Twin Falls	144,154	\$3,030,508	\$2,650,593	\$2,819,772	\$2,861,329	\$5,681,101	\$4,715,314	\$3,550,860
Tygart Lake	251,216	\$5,936,144	\$1,436,740	\$3,882,879	\$3,490,005	\$7,372,884	\$6,193,223	\$4,579,707

TABLE 10: CABIN, CAMPING, AND DAY USE STATE PARKS SPENDING TOTALS BY PARK AND SEGMENT

CABIN, CAMPING, & DAY USE STATE PARKS	TOTAL PARTY DAYS /NIGHTS	DAY USER SPENDING	OVERNIGHT USER SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING	ECONOMIC SIG-NIFICANCE	ECONOMIC IMPACT
Audra	151,672	\$3,540,487	\$485,246	\$2,505,435	\$1,520,298	\$4,025,733	\$3,502,388	\$2,246,868
Babcock	120,491	\$2,589,029	\$1,394,943	\$1,972,759	\$2,011,213	\$3,983,972	\$3,625,415	\$2,737,442
Beartown	32,926	\$816,591	\$0	\$474,182	\$342,409	\$816,591	\$759,430	\$532,230
Beech Fork	191,835	\$2,868,658	\$4,462,406	\$5,083,503	\$2,247,561	\$7,331,064	\$8,137,481	\$5,570,509
Berkeley Springs	133,556	\$3,312,295	\$0	\$1,923,398	\$1,388,896	\$3,312,295	\$3,047,311	\$2,229,355
Blennerhassett	28,350	\$703,102	\$0	\$408,281	\$294,822	\$703,102	\$660,916	\$473,205
Bluestone	196,585	\$4,273,127	\$2,106,336	\$3,697,170	\$2,682,293	\$6,379,463	\$3,189,731	\$2,236,402
Camp Creek	141,319	\$3,224,946	\$592,136	\$2,180,382	\$1,636,701	\$3,817,083	\$3,702,570	\$2,697,470
Carnifex Ferry	66,941	\$1,660,190	\$0	\$964,047	\$696,143	\$1,660,190	\$1,394,559	\$1,023,256
Cass Scenic Railroad	135,974	\$3,059,128	\$1,565,142	\$2,081,197	\$2,543,074	\$4,624,270	\$4,208,086	\$3,141,817
Cathedral	13,146	\$326,031	\$0	\$189,321	\$136,710	\$326,031	\$273,866	\$196,329
Cedar Creek	171,329	\$3,856,250	\$862,468	\$3,041,436	\$1,677,283	\$4,718,719	\$3,727,788	\$2,663,101
*Chief Logan (State Park)								
Droop Mountain	52,474	\$1,301,397	\$0	\$755,701	\$545,696	\$1,301,397	\$1,067,145	\$820,553
Fairfax Stone	2,421	\$60,043	\$0	\$34,866	\$25,177	\$60,043	\$52,237	\$37,858
Holly River	93,177	\$1,849,395	\$1,226,275	\$2,058,507	\$1,017,163	\$3,075,670	\$2,891,130	\$2,099,611
Little Beaver	210,315	\$5,075,804	\$298,513	\$3,124,557	\$2,249,761	\$5,374,317	\$5,051,858	\$3,644,432
Lost River	30,532	\$477,936	\$1,413,226	\$385,008	\$1,506,154	\$1,891,163	\$2,023,544	\$1,704,014
Moncove Lake	72,149	\$1,586,879	\$443,970	\$1,328,425	\$702,424	\$2,030,849	\$1,076,350	\$699,550
Pinnacle Rock	30,480	\$755,928	\$0	\$438,956	\$316,972	\$755,928	\$763,487	\$530,179
Prickett's Fort	91,831	\$2,277,482	\$0	\$1,322,498	\$954,983	\$2,277,482	\$2,049,733	\$1,484,396
Tomlinson Run	140,506	\$3,255,997	\$481,236	\$2,111,992	\$1,625,241	\$3,737,233	\$3,064,531	\$2,174,882

CABIN, CAMPING, & DAY USE STATE PARKS (CONT.)	TOTAL PARTY DAYS /NIGHTS	DAY USER SPENDING	OVERNIGHT USER SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING	ECONOMIC SIG-NIFICANCE	ECONOMIC IMPACT
Tu-Endie-Wei	29,600	\$734,103	\$0	\$426,283	\$307,821	\$734,103	\$579,942	\$421,259
Valley Falls	77,503	\$1,922,136	\$0	\$1,116,155	\$805,981	\$1,922,136	\$1,729,922	\$1,210,083
Watoga	246,219	\$5,352,606	\$2,399,945	\$4,525,402	\$3,227,150	\$7,752,551	\$6,899,771	\$5,135,896
Watters Smith	69,203	\$1,716,289	\$0	\$996,623	\$719,667	\$1,716,289	\$1,681,963	\$1,215,899

*Chief Logan: Already included in Lodge State Park Section

TABLE 11: RAIL TRAILS SPENDING TOTALS BY PARK AND SEGMENT

RAIL TRAILS	TOTAL PARTY DAYS /NIGHTS	DAY USER SPENDING	OVERNIGHT USER SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING	ECONOMIC SIG-NIFICANCE	ECONOMIC IMPACT
Greenbrier River	203,058	\$5,035,999	\$0	\$2,924,327	\$2,111,672	\$5,035,999	\$4,330,959	\$3,139,608
North Bend Rail	203,058	\$5,035,999	\$0	\$2,924,327	\$2,111,672	\$5,035,999	\$4,834,559	\$3,425,027

TABLE 12: STATE FORESTS SPENDING TOTALS BY PARK AND SEGMENT								
STATE FORESTS	TOTAL PARTY DAYS /NIGHTS	DAY USER SPENDING	OVERNIGHT USER SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING	ECONOMIC SIG-NIFICANCE	ECONOMIC IMPACT
Cabwaylingo	111,450	\$2,688,282	\$329,573	\$1,692,419	\$1,325,435	\$3,017,854	\$2,474,641	\$1,819,890
*Calvin Price:								
**Camp Creek								
Coopers Rock	279,011	\$6,759,729	\$335,850	\$4,070,546	\$3,025,032	\$7,095,579	\$6,456,977	\$4,630,653
Greenbrier	120,283	\$2,802,787	\$646,195	\$1,853,903	\$1,595,079	\$3,448,982	\$3,173,064	\$2,376,280
Kanawha	295,033	\$7,202,076	\$243,559	\$4,312,121	\$3,133,513	\$7,445,634	\$7,222,265	\$5,270,863
Kumbrabow	24,328	\$516,948	\$322,317	\$475,288	\$363,977	\$839,265	\$898,014	\$615,295
Seneca	54,215	\$1,200,061	\$593,501	\$957,483	\$836,079	\$1,793,562	\$1,650,077	\$1,226,965

*Calvin Price: Very small unmonitored attendance; not included in this study

**Camp Creek: Already included in State Park Section

4. LIMITATIONS

According to Crompton (1993), the validity and reliability of an economic impact study depends on: 1) the accuracy of visitor spending estimates; 2) adherence of statistical rules applied in the study in particular pertaining to the use of the multiplier coefficients; and 3) reasonable attendance estimates. First, in terms of spending estimates, commonly accepted practices were used in this study to develop the given spending profiles. Second, regarding the multiplier coefficients, the most recent IMPLAN multipliers were utilized. Third, in terms of attendance estimates, those figures were provided to the research team from WV State Park administration. In any state park system, however, these inputs can be continually evaluated and refined through time because all three (spending, multipliers, and attendance) are dynamic and change according to economic and other external conditions.

5. CONCLUSIONS

The findings of this economic significance and impact study illuminate the importance of the State Park and Forest system to the economy of West Virginia. The economic significance ranged between \$213.4 million and \$248.7 million; whereas, the economic impact was between \$160.5 million and \$189.5 million in FY15. Moreover, visitation accounted for 3,209 jobs, \$91.6 million in wage and salary income, and \$140.9 million in value added effects.

As part of this concluding section it is also prudent to note that state park systems bring a host of benefits to a state that are not included input-output economic modeling. One such benefit is an increase in values of those real estate properties adjacent to a park. A well-known [highly cited] researcher, Dr. John Crompton, published a study in 2005 in which he analyzed the findings of a collection of studies that have attempted to estimate the influence of park proximity has on real estate values in the United States. In doing so, he concluded that (Crompton, 2005; p. 203):

“...a positive impact of 20% on property values abutting or fronting a passive park is a reasonable starting point guideline for estimating such a park’s impact.”

Based upon Dr. Crompton’s research it is not unreasonable to extrapolate that, *on average*, across the State of West Virginia, abutting or fronting a state park location increases property value by approximately 20%. This statement regarding real estate values should not be taken out of context of the following parameters:

- The phrase ‘on average’ is purposefully included because a number of factors influence rural real estate prices such as road frontage, easements, soil, timber, etc...
- Such increased real estate valuation cannot be incorporated into the input-output modeling in a study such as the one reported here for two reasons: 1) the increased real-estate values do not represent ‘fresh money’ entering an economy; and 2) it is difficult to estimate the forgone collectable government revenue on the state park acreage that is not taxed.

Not only do West Virginia State Parks and Forests increase real estate values, but also help foster a host of other societal benefits that cannot be incorporated in econometric modeling. They each serve as settings for rest, relaxation, recreation, rejuvenation that increase visitors’ quality of life. The parks serve as medicine for the mind, body and soul and help reduce the manifestation of many of society’s ailments due to the reduction of stress experienced by visitors.

In summary, West Virginia’s State Parks and Forests are gems that yield both tangible economic outcomes as well as a number of intangible benefits.

INVESTIGATOR BIOS

Dr. Vincent Magnini holds a Ph.D. in International Business from Old Dominion University, an MBA from Wichita State University, and a Bachelor's of Science in Hospitality and Tourism Management from Virginia Tech. He was recently ranked as one of the top 12 most prolific hospitality researchers worldwide and holds editorial board appointments on nearly all of the top-ranked research journals in the field. Further, he is a U.S. Fulbright Scholar. He has published six books and more than 100 articles and reports. His recent book titled *Performance Enhancers: Twenty Essential Habits for Service Businesses* appeared on the top 1% of Amazon.com's Best Seller Ranking at multiple points throughout 2014. Dr. Magnini has also been featured three times on National Public Radio's (NPR) *With Good Reason*, once on NPR's *All Things Considered* and cited in the *New York Times*.

Dr. Magnini regularly consults for a number of constituencies in the hospitality and tourism sectors. The consulting activities include projects such as strategic marketing plans, economic impact analyses, feasibility studies, and executive education seminars.

Dr. Muzzo Uysal holds a Ph.D. in tourism and recreation from Texas A&M University, an MBA from the University of New Haven, and a Bachelor's of Science in accounting and business administration from the Ankara Academy of Economics and Commercial Sciences. He has extensive experience in the travel and tourism field; has worked on several funded tourism management and marketing projects and conducted tourism workshops and seminars in more than 30 countries. He is a member of International Academy for the Study of Tourism, the Academy of Leisure Sciences, and serves as co-editor of *Tourism Analysis: An Interdisciplinary Journal*. He has also authored and co-authored a significant number of articles, five monographs, and eight books related to tourism research methods, tourist service satisfaction, tourism and quality-of-life, creating experience value in tourism, consumer psychology in tourism and hospitality settings.

Dr. Uysal has also received a number of awards for Research, Excellence in International Education, Teaching Excellence, and best paper awards. His current research interests center on tourism demand/supply interaction, tourism development and QOL research in tourism.

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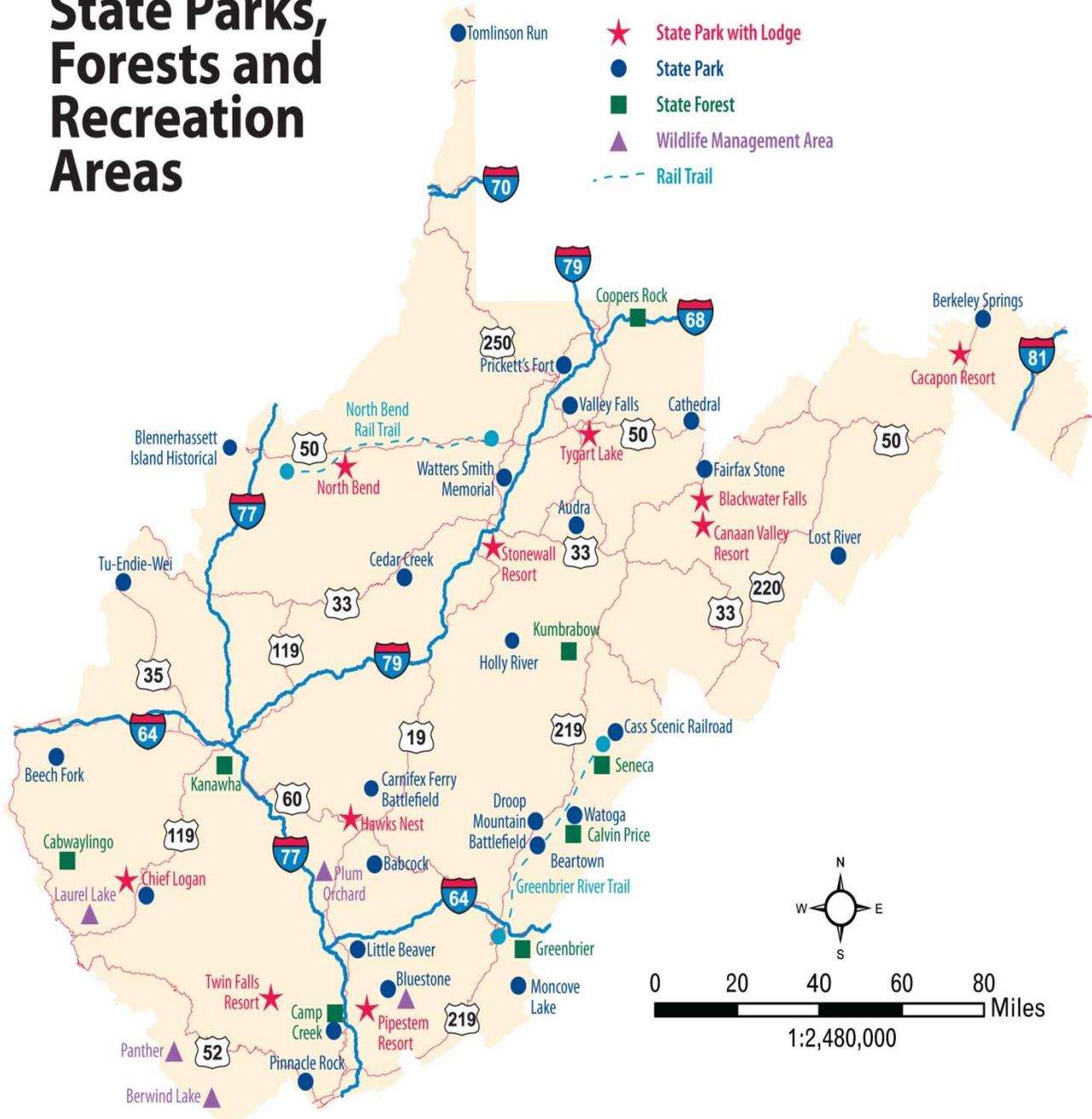
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APPENDICES

Appendix A: Map of West Virginia State Parks, Forests and Recreation Areas

West Virginia Division of Natural Resources

State Parks, Forests and Recreation Areas



Source of map: <http://www.wvcommerce.org/>

Appendix B: Glossary of Terms

{The definitions in this glossary are paraphrased directly from
Stynes et al. (2000) MGM2 user's manual}

Direct effects – the changes in sales, income and jobs at the in an area as a result of first-round visitor spending.

Economic impact – economic output modeling that includes and consequent multiplier effects spending by 1) in-state residents traveling more than 50 miles one-way to visit the park; and 2) all out-of-state visitors. Thus, economic impact figures reflect all of the “fresh money” entering an economy as a result of a given state park.

Economic significance – economic output modeling that includes all visitor spending and consequent multiplier effects by both locals and non-locals. Such visitor spending includes both spending inside the park and outside the park (inside the state). Consequently, economic significance figures represent all of the economic activity stimulated by a park location within the state.

Indirect effects – the changes in sales, income and jobs to businesses that supply goods and services to the park location.

Induced effects – the changes in economic activity in the region stimulated by household spending of income earned through direct and indirect effects of visitor spending.

IMPLAN – a computer-based input / output economic modeling system. With IMPLAN one can estimate 528 sector input / output models for any region consisting of one or more counties. IMPLAN includes procedures for generating multipliers and estimating impacts by applying final demand changes to the model.

MGM2 – a computer-based input / output economic modeling system. The program (termed ‘Money Generating Model’ was developed by late Michigan State University Professor Daniel Stynes and his colleagues for original use by the National Park Service.

Multipliers – express the magnitude of the secondary effects in a given geographic area and are often in the form of a ratio of the total change in economic activity relative to the direct change. Multipliers reflect the degree of interdependency between sectors in a region's economy and can vary substantially across regions and sectors.

Secondary effects – the changes in economic activity from subsequent rounds of re-spending of tourism dollars. There are two types of secondary effects: indirect and induced (see above).

Value added (also termed ‘gross regional product’) – the sum of total income and indirect business taxes. Value added is a commonly used measure of the contribution of a region to the national economy because it avoids the double counting of intermediate sales and incorporates only the ‘value added’ by the region to final products.

Appendix C: Economic Impact Survey

Name of Park/Forest/Rail-Trail: _____ Date(s) of current visit: _____
Arrive Depart

For this visit, please report all spending by you and other members of your party outside of the park, but within the state of West Virginia (please estimate to the nearest dollar):

Hotels, motels, cabins, B&B _____
Camping fees and charges _____
Restaurants and bars _____
Groceries and convenience items _____
Gas and oil (auto, RV, boat, etc...) _____
Other auto expenses (repairs, parking, tolls, etc...) _____
Airlines, rail, bus, taxi, car rental, shuttles, etc... _____
Other transportation-related expenses _____
Clothing _____
Sporting (including fishing/hunting) equipment _____
Souvenirs and gifts _____
Other goods _____
Other entertainment _____
Other services _____

How many people do these expenses cover? _____

During this visit, are you a (please check one):

Day user _____
Lodge/resort guest _____
Cabin/cottage guest _____
Camping guest _____

Approximately how many miles did you travel one way to visit this park? _____

What is your primary state of residence? _____

What is your zip code? _____

Thank you for your participation!

West Virginia State Parks and Forests – Economic Significance and Impact