



THE ECONOMIC AND FISCAL IMPACTS OF VIRGINIA'S STATE PARKS:

2022

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EXECUTIVE SUMMARY

Visitors attracted annually to Virginia's State Parks trigger a large amount of economic activity throughout the state. This Executive Summary highlights the key findings of the 2022 Virginia State Parks economic impact analyses:

- In 2022, visitors to Virginia's State Parks spent an estimated \$304.9M in the Commonwealth. Approximately 40.4% [\$123.2M] of this spending was by out-of-state visitors.*
- The total economic activity stimulated by Virginia State Parks during 2022 was approximately \$478.7M.
- The total economic impact of Virginia State Parks during 2022 was an estimated \$364.2M. Economic impact is a measure of "fresh money" infused into the state's economy that likely would have not been generated in the absence of the park system.
- At the individual park level, economic impacts range from \$1.1M to \$44.4M (not including parks under development).
- In 2022, for every \$1 of general tax revenue provided to state parks, \$15.21, on average, was generated in fresh money that likely would not be there if not for the operation of Virginia State Parks.
- Regarding employment, the economic activity stimulated by visitation to Virginia State Parks supported approximately 3,914 jobs in the state during 2022.
- In terms of wages and income, the economic activity spawned by Virginia State Parks was responsible for roughly \$171.4M in wage and salary income in 2022.
- Economic activity created by Virginia State Parks was associated with approximately \$274.4M in value-added effects which is a measure of the park system's contribution to the gross domestic product of the Commonwealth. These effects are especially important at the park-by-park level where most of the impact is retained in the local area.
- Economic activity stimulated by Virginia State Parks generated approximately \$25.6M in state and local tax revenues during 2022. As such, roughly \$1.07 in state and local taxes was generated for every dollar of tax money spent on the park system.

* NOTE: Visitation and revenues impacted by closed facilities at Bear Creek Lake, Douthat, Fairy Stone, and First Landing.

INTRODUCTION

With more Americans returning to pre-pandemic work schedules during 2022, visitation at Virginia's State Parks was not as robust as what was witnessed during 2021. Despite a slight decline in annual attendance volumes, 2022 was a very busy year. To gain a more detailed understanding of visitor and revenue volumes, this study estimates the economic activity and impacts that Virginia State Parks supported in the Commonwealth's economy during 2022. Specific objectives of this study include:

- Assessing the direct and secondary economic activity and impacts of Virginia State Parks on a state-wide level;
- Estimating the direct and secondary economic activity and impacts of each specific park;
- Identifying economic benefits derived from non-residents of Virginia;
- Estimating spending derived from both day-user and overnight-user groups; and
- Modeling the economic benefits derived from park operational spending and capital improvement projects.

Achieving the above objectives, this study details the distribution of travel and recreational impacts of Virginia State Parks among the six park districts. 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. In addition, a value-added effect is also calculated which models Virginia State Parks' contribution to the gross domestic product of the Commonwealth.

To fulfill 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 research, this economic modeling is subject to limitations which are also described herein. The report ends with a brief discussion section that summarizes key findings and also addresses some societal

benefits provided by Virginia State Parks that cannot be included in econometric input-output modeling but are worthy of discussion.

This report represents the second year's work in a memorandum of understanding (MOU) between Longwood University and the Virginia Department of Conservation and Recreation in which Longwood's College of Business and Economics produces annual economic activity reports for Virginia State Parks. As will be explained later in this report, this agreement calls for the continuous refinement of each economic modeling variable: administering a visitor spending survey to better understand spending patterns by visitor segment; and, incorporation of the most recent IMPLAN multipliers to model how money produces secondary economic effects in Virginia.

While every effort was taken to make this report clear and understandable to a non-economist audience, readers are advised that there is a glossary of terms contained in Appendix B.

{Methods section begins on next page}

DIRECT IMPACT MEASUREMENT

Economic activity of the state park system is created primarily from three sources: park visitor spending, the parks' operational expenditures (to the degree that they are not derived from visitor revenues, i.e. the tax derived portion of the park budget), and capital investment (again, to the degree that it is not derived from visitor revenues). In terms of visitor spending profiles, customized spending profiles were developed for Virginia State Parks by collecting 3,802 completed spending surveys from park visitors during 2016. The spending profile survey was added as a supplemental section on the agency's ongoing visitor satisfaction survey. The spending profiles that resulted from the analysis of the survey data and removal of data outliers are listed in Table 1.¹ These profiles represent spending both inside and outside of the park, but within the state. Other than visitors' spending, park operational and capital expenditure amounts were provided by the Virginia Department of Conservation and Recreation (DCR).

Additional primary data was collected in the parks during 2017 to further calibrate the economic impact modeling. More specifically, park staff recorded 762 vehicle observation hours as well as 679 visitor interviews to calibrate model estimations regarding the average number of occupants per vehicle (day use; camping; cabins) and the ratio of local, non-local,² and non-resident visitors.

{Table 1 is presented on next page}

¹ The figures in Table 1 are adjusted for annual inflation. While the COVID-19 pandemic likely caused some spending to shift between expenditure categories (e.g. restaurant spending to grocery spending), there is no evidence to indicate that total spending per visitor has significantly reduced. The memorandum of understanding for this study called for the collection of primary data during 2022 to help refresh modeling inputs. Unfortunately, however, the launch of a new point of sales IT system in the parks prevented the collection of the data during 2022.

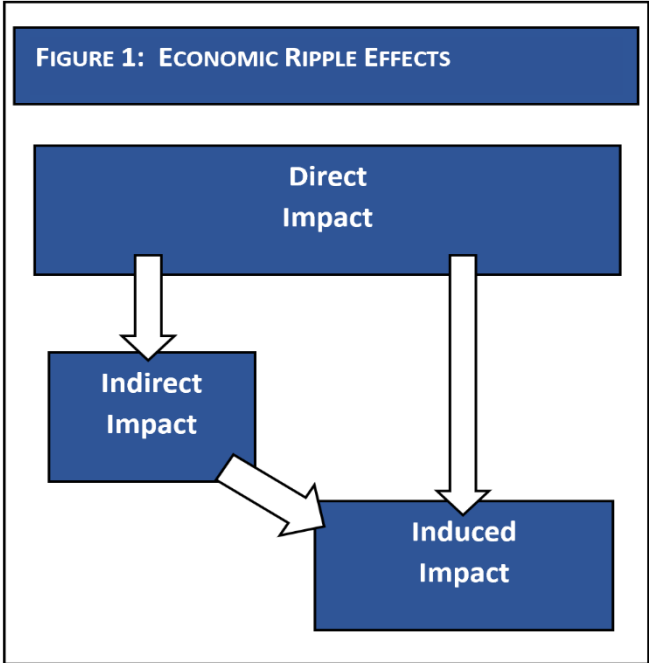
² Non-local visitors are defined as Virginia residents who drive 50 miles or more (one-way) to visit the park.

TABLE 1: AVERAGE VISITOR SPENDING: PROFILES BY SEGMENT (PER PARK DAY) ^a							
DAY VISITORS				OVERNIGHT GUESTS			
SPENDING CATEGORY	LOCAL DAY VISITOR	NON-LOCAL DAY VISITOR	NON-RESIDENT DAY VISITOR	RESIDENT CABIN GUEST	RESIDENT CAMPING GUEST	NON-RESIDENT CABIN GUEST	NON-RESIDENT CAMPING GUEST
OVERALL PER VISITOR:	\$20.54	\$61.72	\$79.22	\$64.35	\$40.98	\$86.73	\$46.83

^a This Table does not include park operational or capital improvement spending.

SECONDARY IMPACT MEASUREMENT

In addition to assessing the direct impacts of the park system’s economic activity, this study also models secondary or ripple effects which comprise economic activity from subsequent rounds of re-spending of money. As shown in Figure 1, there are two types of ripple effects: indirect and induced. Indirect effects entail the changes in sales, income, and jobs of suppliers to entities included in direct impact (Stynes et al., 2000). Induced effects encapsulate the changes in economic activity in the region stimulated by household spending of income earned through direct and indirect effects.



Indirect and induced effects are estimated using economic multipliers. Multipliers reflect the extent of interdependency between sectors in a region’s economy and can vary significantly between regions and sectors (Stynes et al., 2000). Here is a simple example of how a multiplier can be interpreted: if the multiplier for the restaurant sector in a given region is 1.37 then it can be estimated that every dollar spent at a restaurant results in 37 cents of secondary economic activity in the region.

The economic multipliers, as well as calculations of job supported, tax revenues generated, and value-added effects were facilitated through the use of IMPLAN software. Specifically, economic multipliers for the Commonwealth of Virginia are commercially available in an economic impact estimation software titled IMPLAN commercialized by MIG, Inc. Therefore, the most recent IMPLAN multipliers were employed in this study to guide the estimation of indirect and induced economic impacts.

VISITATION MEASUREMENT

Park attendance counts for 2022 were provided to the researcher by the Virginia Department of Conservation and Recreation. The attendance counting practices used in 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). For instance, automated vehicle counting technology is utilized at many unstaffed park entry points by multiplying vehicle counts by standard occupancy multipliers, with adjustments made for service vehicle traffic and park re-entry traffic. Overnight visitor calculations are made by multiplying site occupancies by standard multipliers, as well as employing information from the centralized reservations system.

The 2016 and 2017 data collection efforts described earlier in this report's Methods section proved useful in calibrating attendance multipliers. As such, to tabulate the modeling attendance for this study, per party multipliers of 3.4, 3.2, and 4.2 for day use, camping, and cabins (respectively) were used as model inputs.

MEASURING ECONOMIC ACTIVITY VS. ECONOMIC IMPACT

Economic impact in this study is 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 categories:

Economic activity – economic output modeling that includes all visitor spending and consequent multiplier effects by both locals and non-locals as well as any money spent by parks that was not supported by visitor spending. Consequently, economic activity figures represent all of the economic activity stimulated by a park location within the state.

- Unadjusted economic activity: economic activity output figures computed using statewide IMPLAN multipliers.
- Adjusted economic activity: calibrated economic activity output figures based upon whether a given park’s county(ies) has economic activity above or below the state average.

Economic impact – economic output modeling that includes all visitor spending and consequent multiplier effects by 1) in-state residents traveling 50 miles or more (one-way) to visit the park; and 2) all out-of-state visitors. Economic impact modeling also includes any money spent by parks (operational and capital improvements) that was not supported by visitor spending. Although operational and capital improvement spending derive (in part) from tax monies, they demonstrate economic impact when infused into local areas where parks exist.

Thus, economic impact figures reflect all of the “fresh money” entering an economy as a result of a given state park.

- Unadjusted economic impact: economic impact output figures computed using statewide IMPLAN multipliers. Also, unadjusted figures do not deduct spending by visitors who report that the park was not their primary destination.
- Adjusted economic impact: calibrated economic impact output figures based upon whether a given park’s county(ies) has economic activity above or below the state average. Adjusted economic impact figures are also reduced by 12% (Magnini and Uysal, 2015a) to account for spending by park visitors who likely would have traveled and spent money in the state regardless of whether the park existed.

{Results section begins on next page}

RESULTS

This section of the report contains the results of the economic modeling. First, visitor spending findings are presented (see Table 2). This visitor spending is portioned according to day use versus overnight and by Virginia resident versus non-resident. Second, economic activity and economic impact are reported (see Table 3). Third, job-related results are detailed (see Table 4). In the jobs outputs, both estimated total jobs and full-time equivalent (FTE) jobs are reported. FTE jobs represent total hours worked divided by the average annual hours worked in full-time jobs.

Fourth, park-by-park findings are listed in Tables 5-10 (see Appendix A for a map of park locations). The park-by-park results include estimated state and local tax revenues generated by each park's economic activity. In Virginia, for this type of tourism-related spending, the split between state and local tax revenues can be estimated at approximately 60-40 (state-local) for this type of tourism-related spending (<https://www.vatc.org/research/economicimpact/>).

Next in this results section, outcomes of capital investments are displayed (see Table 11). Lastly, the effects of park operational spending are reported (see Table 12). To reiterate, these capital improvement and operational components are already included in each park's modeling presented in Tables 5-10 but are partitioned as stand-alone modeling components in Tables 11 and 12 to tease-out the economic contributions of these elements. On a separate note, it is important to point out that the system-wide economic results (for example, those listed in the Executive Summary) are slightly different than the individual district results summed together because the overall system-wide IMPLAN modeling accounts for different indirect and induced effects than simply summing the individual district results. The glossary contained in Appendix B offers definitions of key terms used in this results section.

{Table 2 is presented on next page}

TABLE 2: VISITOR SPENDING*

PARK	DAY VISITOR SPENDING	OVERNIGHT GUEST SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING
DISTRICT 1					
Belle Isle	\$848K	\$1.1M	\$1.2M	\$723K	\$1.9M
Chippokes Plantation	\$2.4M	\$1.9M	\$2.6M	\$1.7M	\$4.3M
False Cape	\$840K	\$138K	\$572K	\$406K	\$978K
First Landing	\$25.0M	\$8.3M	\$19.9M	\$13.4M	\$33.3M
Kiptopeke	\$11.3M	\$4.2M	\$9.3M	\$6.2M	\$15.6M
Machicomoco	\$3.3M	\$757K	\$2.4M	\$1.6M	\$4.0M
York River	\$4.4M	\$0	\$2.6M	\$1.9M	\$4.5M
TOTAL D1	\$48.1M	\$16.4M	\$38.5M	\$26.0M	\$64.5M
DISTRICT 2					
Caledon	\$1.3M	\$76K	\$800K	\$585K	\$1.4M
Lake Anna	\$5.1M	\$3.3M	\$5.2M	\$3.2M	\$8.4M
Leesylvania	\$15.8M	\$17K	\$9.1M	\$6.8M	\$15.8M
Mason Neck	\$6.8M	\$0	\$3.9M	\$2.9M	\$6.8M
Westmoreland	\$2.3M	\$3.9M	\$4.0M	\$2.2M	\$6.3M
Widewater	\$1.3M	\$343	\$747K	\$556K	\$1.3M
TOTAL D2	\$32.6M	\$7.3M	\$23.7M	\$16.2M	\$39.9M
DISTRICT 3					
Douthat	\$1.3M	\$4.5M	\$3.8M	\$2.0M	\$5.8M
James River	\$513K	\$2.8M	\$2.2M	\$1.1M	\$3.3M
Natural Bridge	\$9.0M	\$0	\$5.2M	\$3.9M	\$9.0M
Seven Bends	\$3.4M	\$0	\$1.9M	\$1.4M	\$3.4M
Shenandoah River	\$4.0M	\$2.4M	\$3.9M	\$2.5M	\$6.4M
Sky Meadows	\$5.5M	\$434K	\$3.4M	\$2.5M	\$5.9M
TOTAL D3	\$23.6M	\$10.1M	\$20.4M	\$13.3M	\$33.7M
DISTRICT 4					
Bear Creek Lake	\$1.6M	\$1.5M	\$2.0M	\$1.2M	\$3.1M
High Bridge Trail	\$5.6M	\$0	\$3.2M	\$2.4M	\$5.6M
Holliday Lake	\$1.5M	\$769K	\$1.4M	\$917K	\$2.3M
Pocahontas	\$39.9M	\$5.6M	\$26.6M	\$19.0M	\$45.6M
Powhatan	\$4.7M	\$1.2M	\$3.5M	\$2.4M	\$5.9M
Sailor's Creek Battlefield	\$491K	\$0	\$282K	\$210K	\$491K
Staunton River Battlefield	\$1.1M	\$0	\$611K	\$454K	\$1.1M
Twin Lakes	\$4.4M	\$1.1M	\$3.3M	\$2.2M	\$5.5M
TOTAL D4	\$59.4M	\$10.2M	\$40.9M	\$28.7M	\$69.6M
DISTRICT 5					
Claytor Lake	\$7.0M	\$4.4M	\$7.0M	\$4.4M	\$11.3M
Fairy Stone	\$1.5M	\$2.0M	\$2.3M	\$1.3M	\$3.6M
Occoneechee	\$2.5M	\$2.4M	\$3.1M	\$1.8M	\$5.0M
Smith Mountain Lake	\$16.1M	\$2.7M	\$11.1M	\$7.7M	\$18.8M
Staunton River	\$2.4M	\$1.5M	\$2.4M	\$1.5M	\$3.9M
TOTAL D5	\$29.6M	\$13.0M	\$25.8M	\$16.7M	\$42.6M

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DISTRICT 6					
PARK	DAY VISITOR SPENDING	OVERNIGHT GUEST SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING
Clinch River	\$0	\$0	\$0	\$0	\$0
Grayson Highlands	\$4.3M	\$2.9M	\$4.4M	\$2.8M	\$7.3M
Hungry Mother	\$10.7M	\$4.6M	\$9.3M	\$6.0M	\$15.3M
Natural Tunnel	\$1.7M	\$1.8M	\$2.2M	\$1.3M	\$3.5M
New River Trail	\$21.9M	\$466K	\$12.8M	\$9.5M	\$22.3M
Southwest VA Museum	\$1.1M	\$25K	\$670K	\$492K	\$1.2M
Wilderness Road	\$4.9M	\$3K	\$2.8M	\$2.1M	\$4.9M
TOTAL D6	\$44.7M	\$9.8M	\$32.3M	\$22.2M	\$54.5M
NOTES: * Slight differences in sums of addition are due to rounding of the figures. **Visitation and revenues impacted by closed facilities at Bear Creek Lake, Douthat, Fairy Stone, and First Landing.					

{Economic activity section begins on next page}

TABLE 3: ECONOMIC ACTIVITY AND IMPACT OF VIRGINIA STATE PARKS

PARK	ECONOMIC ACTIVITY (UNADJUSTED)	ECONOMIC ACTIVITY (ADJUSTED)	ECONOMIC ACTIVITY (AVERAGE)	ECONOMIC IMPACT (UNADJUSTED)	ECONOMIC IMPACT (ADJUSTED)	ECONOMIC IMPACT (AVERAGE)
DISTRICT 1						
Belle Isle	\$3.4M	\$3.3M	\$3.4M	\$2.8M	\$2.4M	\$2.6M
Chippokes Plantation	\$6.7M	\$6.4M	\$6.6M	\$5.2M	\$4.4M	\$4.8M
False Cape	\$2.4M	\$2.4M	\$2.4M	\$2.0M	\$1.8M	\$1.9M
First Landing	\$47.0M	\$47.0M	\$47.0M	\$34/7M	\$30.5M	\$32.6M
Kiptopeke	\$22.4M	\$20.6M	\$21.5M	\$16.7M	\$13.6M	\$15.1M
Machicomoco	\$5.7M	\$5.5M	\$5.6M	\$4.2M	\$3.5M	\$3.8M
York River	\$7.4M	\$7.1M	\$7.2M	\$5.6M	\$4.7M	\$5.2M
TOTAL D1	\$95.0M	\$92.3M	\$93.6M	\$71.2M	\$60.9M	\$66.0M
DISTRICT 2						
Caledon	\$2.7M	\$2.7M	\$2.7M	\$2.2M	\$1.9M	\$2.0M
Lake Anna	\$12.0M	\$12.4M	\$12.2M	\$9.1M	\$8.4M	\$8.7M
Leesylvania	\$24.0M	\$25.0M	\$24.5M	\$17.7M	\$16.2M	\$17.0M
Mason Neck	\$10.7M	\$11.1M	\$10.9M	\$8.0M	\$7.3M	\$7.7M
Westmoreland	\$9.8M	\$9.4M	\$9.6M	\$7.8M	\$6.6M	\$7.2M
Widewater	\$8.8M	\$9.2M	\$9.0M	\$8.4M	\$7.7M	\$8.0M
TOTAL D2	\$67.9M	\$69.8M	\$68.9M	\$53.2M	\$48.1M	\$50.6M
DISTRICT 3						
Douthat	\$14.3M	\$13.7M	\$14.0M	\$12.6M	\$10.7M	\$11.6M
James River	\$5.2M	\$5.0M	\$5.1M	\$4.3M	\$3.6M	\$4.0M
Natural Bridge	\$13.0M	\$12.5M	\$12.8M	\$9.5M	\$8.0M	\$8.7M
Seven Bends	\$5.6M	\$5.6M	\$5.6M	\$4.3M	\$4.3M	\$4.3M
Shenandoah River	\$9.3M	\$9.3M	\$9.3M	\$7.1M	\$6.3M	\$6.7M
Sky Meadows	\$9.1M	\$9.5M	\$9.3M	\$6.8M	\$6.2M	\$6.5M
TOTAL D3	\$56.7M	\$55.7M	\$56.2M	\$44.6M	\$39.0M	\$41.8M
DISTRICT 4						
Bear Creek Lake	\$6.1M	\$5.9M	\$6.0M	\$5.1M	\$4.3M	\$4.7M
High Bridge Trail	\$9.5M	\$9.1M	\$9.3M	\$7.5M	\$6.1M	\$6.8M
Holliday Lake	\$3.8M	\$3.7M	\$3.4M	\$3.0M	\$2.5M	\$2.8M
Pocahontas	\$64.8M	\$64.8M	\$64.8M	\$47.3M	\$41.6M	\$44.4M
Powhatan	\$8.8M	\$8.8M	\$8.8M	\$6.6M	\$5.8M	\$6.2M
Sailor's Creek Battle.	\$1.4M	\$1.4M	\$1.4M	\$1.2M	\$996K	\$1.1M
Staunton River Battle.	\$2.4M	\$2.2M	\$2.3M	\$2.0M	\$1.6M	\$1.8M
Twin Lakes	\$8.5M	\$7.8M	\$8.1M	\$6.4M	\$5.2M	\$5.8MM
TOTAL D4	\$105.3M	\$103.6M	\$104.4M	\$79.2M	\$68.2M	\$73.7M
DISTRICT 5						
Claytor Lake	\$16.2M	\$15.5M	\$15.8M	\$12.2M	\$10.3M	\$11.3M
Fairy Stone	\$10.0M	\$9.2M	\$9.6M	\$8.9M	\$6.2M	\$7.5M
Occoneechee	\$7.4M	\$6.8M	\$7.1M	\$5.8M	\$4.7M	\$5.2M
Smith Mountain Lake	\$26.9M	\$26.9M	\$26.9M	\$19.8M	\$17.4M	\$18.6M
Staunton River	\$7.1M	\$6.5M	\$6.8M	\$5.8M	\$4.7M	\$5.2M
TOTAL D5	\$67.5M	\$64.9M	\$66.2M	\$52.4M	\$43.3M	\$47.9M

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DISTRICT 6						
PARK	ECONOMIC ACTIVITY (UNADJUSTED)	ECONOMIC ACTIVITY (ADJUSTED)	ECONOMIC ACTIVITY (AVERAGE)	ECONOMIC IMPACT (UNADJUSTED)	ECONOMIC IMPACT (ADJUSTED)	ECONOMIC IMPACT (AVERAGE)
Clinch River	\$1.6M	\$1.5M	\$1.5M	\$1.6M	\$1.5M	\$1.5M
Grayson Highlands	\$10.1M	\$9.3M	\$9.7M	\$7.5M	\$6.1M	\$6.8M
Hungry Mother	\$23.5M	\$21.6M	\$22.6M	\$18.0M	\$14.6M	\$16.3M
Natural Tunnel	\$7.9M	\$7.3M	\$7.6M	\$6.8M	\$5.5M	\$6.1M
New River Trail	\$36.8M	\$33.9M	\$35.3M	\$28.0M	\$22.7M	\$25.4M
SW VA Museum	\$2.6M	\$2.4M	\$2.5M	\$2.1M	\$1.7M	\$1.9M
Wilderness Road	\$8.9M	\$8.2M	\$8.6M	\$7.0M	\$5.7M	\$6.3M
TOTAL D6	\$91.4M	\$84.1M	\$87.8M	\$71.1M	\$57.7M	\$64.4M

{Jobs section begins on next page}

TABLE 4: JOBS ATTRIBUTED TO VIRGINIA STATE PARKS

PARK	DIRECT JOBS	INDIRECT JOBS	INDUCED JOBS	TOTAL JOBS	FTE JOBS ^a
DISTRICT 1					
Belle Isle	20.5	4.1	4.0	28.7	26.1
Chippokes Plantation	40.4	7.9	7.7	56.0	51.0
False Cape	13.8	3.0	2.8	19.6	17.8
First Landing	288.1	55.2	53.8	397.2	361.4
Kiptopeke	135.8	26.3	25.5	187.6	170.7
Machicomoco	34.5	6.7	6.5	47.7	43.4
York River	44.0	8.9	8.5	61.4	55.8
TOTAL D1	577.1	112.1	108.8	798.2	726.2
DISTRICT 2					
Caledon	15.4	3.3	3.1	21.8	19.8
Lake Anna	73.4	13.9	13.6	100.9	91.8
Leesylvania	145.4	28.9	27.5	201.7	183.5
Mason Neck	64.3	12.9	12.3	89.5	81.4
Westmoreland	59.4	11.3	11.3	82.0	74.7
Widewater	38.5	8.6	10.3	57.4	52.2
TOTAL D2	396.4	78.9	78.1	553.3	503.4
DISTRICT 3					
Douthat	67.0	16.9	15.0	98.5	89.6
James River	31.9	6.0	6.1	44.0	40.1
Natural Bridge	79.5	15.6	14.9	109.9	100.0
Seven Bends	24.7	5.2	4.8	34.7	31.6
Shenandoah River	56.9	10.9	10.7	78.6	71.5
Sky Meadows	55.0	10.9	10.5	76.3	69.5
TOTAL D3	315	65.5	62	442	402.3
DISTRICT 4					
Bear Creek Lake	33.6	7.3	6.8	47.6	43.3
High Bridge Trail	56.3	11.4	10.9	78.6	71.5
Holliday Lake	23.1	4.6	4.5	32.2	29.3
Pocahontas	396.4	76.8	74.1	547.2	498.0
Powhatan	53.6	10.5	10.1	74.2	67.5
Sailor's Creek Battlefield	8.1	1.8	1.7	11.5	10.5
Staunton River Battlefield	12.8	3.0	2.7	18.4	16.8
Twin Lakes	51.3	10.1	9.7	71.1	64.7
TOTAL D4	635.2	125.5	120.5	880.8	801.6
DISTRICT 5					
Claytor Lake	98.6	18.8	18.4	135.9	123.6
Fairy Stone	44.0	11.9	10.2	65.8	59.9
Occoneechee	45.2	8.6	8.5	62.3	56.7
Smith Mountain Lake	164.4	31.8	30.6	226.8	206.4
Staunton River	42.1	8.6	8.3	58.9	53.6
TOTAL D5	394.3	79.7	76	549.7	500.2
Continued on next page					

DISTRICT 6					
PARK	DIRECT JOBS	INDIRECT JOBS	INDUCED JOBS	TOTAL JOBS	FTE JOBS^a
Clinch River	7.7	1.9	1.7	11.3	10.3
Grayson Highlands	62.4	11.8	11.7	85.9	78.1
Hungry Mother	141.9	27.8	26.9	196.5	178.8
Natural Tunnel	43.0	9.5	8.9	61.4	55.9
New River Trail	214.1	44.5	41.6	299.9	272.9
Southwest VA Museum	15.0	3.2	3.0	21.2	19.3
Wilderness Road	53.0	11.0	10.4	74.2	67.5
TOTAL D6	537.1	109.7	104.2	750.4	682.8
^a Full-time equivalent (FTE) jobs: total hours worked divided by avg. annual hours worked in full-time jobs.					

{Employment, labor income, value-added and tax revenue section begins on next page}

EMPLOYMENT, LABOR INCOME, VALUE-ADDED, AND TAX REVENUES

Tables 5-10 add further detail to previously presented results by partitioning the direct, indirect, and induced effects of labor income and value-added figures for each park, as well as tax revenues generated.

TABLE 5: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 1				
PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
DISTRICT 1				
Belle Isle	Direct Effect	20.5	\$779K	\$1.1M
	Indirect Effect	4.1	\$273K	\$459K
	Induced Effect	4.0	\$229K	\$441K
	Total Effect	28.7	\$1.3M	\$2.0M
Total state and local taxes	\$145K			
Chippokes Plantation	Direct Effect	40.4	\$1.5M	\$2.2M
	Indirect Effect	7.9	\$533K	\$893K
	Induced Effect	7.7	\$439K	\$844K
	Total Effect	56.0	\$2.5M	\$3.9M
Total state and local taxes	\$302K			
False Cape	Direct Effect	13.8	\$541K	\$718K
	Indirect Effect	3.0	\$194K	\$332K
	Induced Effect	2.8	\$160K	\$308K
	Total Effect	19.6	\$895K	\$1.4M
Total state and local taxes	\$88K			
First Landing	Direct Effect	288.1	\$10.3M	\$15.1M
	Indirect Effect	55.2	\$3.8M	\$6.3M
	Induced Effect	53.8	\$3.1M	\$5.9M
	Total Effect	397.2	\$17.1M	\$27.2M
Total state and local taxes	\$2.2M			
Kiptopeke	Direct Effect	135.8	\$4.9M	\$7.2M
	Indirect Effect	26.3	\$1.8M	\$3.0M
	Induced Effect	25.5	\$1.4M	\$2.8M
	Total Effect	187.6	\$8.1M	\$13.0M
Total state and local taxes	\$1.0M			
Continued on next page				

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
Machicomoco	Direct Effect	34.5	\$1.2M	\$1.8M
	Indirect Effect	6.7	\$458K	\$762K
	Induced Effect	6.5	\$367K	\$706K
	Total Effect	47.7	\$2.1M	\$3.3M
Total state and local taxes	\$266K			
York River	Direct Effect	44.0	\$1.6M	\$2.3M
	Indirect Effect	8.9	\$598K	\$1.0M
	Induced Effect	8.5	\$480K	\$922K
	Total Effect	61.4	\$2.7M	\$4.2M
Total state and local taxes	\$314K			

{District 2 presented on next page}

TABLE 6: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 2

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
DISTRICT 2				
Caledon	Direct Effect	15.4	\$585K	\$817K
	Indirect Effect	3.3	\$219K	\$372K
	Induced Effect	3.1	\$175K	\$336K
	Total Effect	21.8	\$977K	\$1.5M
Total state and local taxes	\$106K			
Lake Anna	Direct Effect	73.4	\$2.6M	\$3.9M
	Indirect Effect	13.9	\$950K	\$1.6M
	Induced Effect	13.6	\$771K	\$1.5M
	Total Effect	100.9	\$4.3M	\$7.0M
Total state and local taxes	\$594K			
Leesylvania	Direct Effect	145.4	\$5.2M	\$7.5M
	Indirect Effect	28.9	\$2.0M	\$3.3M
	Induced Effect	27.5	\$1.6M	\$3.0M
	Total Effect	201.7	\$8.7M	\$13.8M
Total state and local taxes	\$1.1M			
Mason Neck	Direct Effect	64.3	\$2.3M	\$3.3M
	Indirect Effect	12.9	\$868K	\$1.5M
	Induced Effect	12.3	\$695K	\$1.3M
	Total Effect	89.5	\$3.9M	\$6.1M
Total state and local taxes	\$464K			
Westmoreland	Direct Effect	59.4	\$2.2M	\$3.2M
	Indirect Effect	11.3	\$769K	\$1.3M
	Induced Effect	11.3	\$639K	\$1.2M
	Total Effect	82.0	\$3.6M	\$5.7M
Total state and local taxes	\$470K			
Widewater	Direct Effect	38.5	\$2.1M	\$2.7M
	Indirect Effect	8.6	\$627K	\$1.1M
	Induced Effect	10.3	\$585K	\$1.1M
	Total Effect	57.4	\$3.3M	\$4.9M
Total state and local taxes	\$213K			

TABLE 7: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 3

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
DISTRICT 3				
Douthat	Direct Effect	67.0	\$2.8M	\$4.3M
	Indirect Effect	16.9	\$1.1M	\$2.0M
	Induced Effect	15.0	\$850K	\$1.6M
	Total Effect	98.5	\$4.8M	\$7.9M
Total state and local taxes	\$519K			
James River	Direct Effect	31.9	\$1.2M	\$1.7M
	Indirect Effect	6.0	\$409K	\$678K
	Induced Effect	6.1	\$345K	\$662K
	Total Effect	44.0	\$1.9M	\$3.1M
Total state and local taxes	\$257K			
Natural Bridge	Direct Effect	79.5	\$2.8M	\$4.1M
	Indirect Effect	15.6	\$1.1M	\$1.8M
	Induced Effect	14.9	\$843K	\$1.6M
	Total Effect	109.9	\$4.7M	\$7.5M
Total state and local taxes	\$590K			
Seven Bends	Direct Effect	24.7	\$903K	\$1.3M
	Indirect Effect	5.2	\$349K	\$585K
	Induced Effect	4.8	\$273K	\$524K
	Total Effect	34.7	\$1.5M	\$2.4M
Total state and local taxes	\$176K			
Shenandoah River	Direct Effect	56.9	\$2.1M	\$3.0M
	Indirect Effect	10.9	\$744K	\$1.2M
	Induced Effect	10.7	\$609K	\$1.2M
	Total Effect	78.6	\$3.4M	\$5.4M
Total state and local taxes	\$436K			
Sky Meadows	Direct Effect	55.0	\$2.0M	\$2.9M
	Indirect Effect	10.9	\$737K	\$1.2M
	Induced Effect	10.5	\$593K	\$1.1M
	Total Effect	76.3	\$3.3M	\$5.2M
Total state and local taxes	\$399K			

TABLE 8: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 4				
PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
DISTRICT 4				
Bear Creek Lake	Direct Effect	33.6	\$1.3M	\$1.9M
	Indirect Effect	7.3	\$490K	\$828K
	Induced Effect	6.8	\$384K	\$737K
	Total Effect	47.6	\$2.1M	\$3.5M
Total state and local taxes	\$263K			
High Bridge Trail	Direct Effect	56.3	\$2.1M	\$2.9M
	Indirect Effect	11.4	\$767K	\$1.3M
	Induced Effect	10.9	\$619K	\$1.2M
	Total Effect	78.6	\$3.5M	\$5.4M
Total state and local taxes	\$399K			
Holliday Lake	Direct Effect	23.1	\$861K	\$1.2M
	Indirect Effect	4.6	\$309K	\$518K
	Induced Effect	4.5	\$255K	\$489K
	Total Effect	32.2	\$1.4M	\$2.2M
Total state and local taxes	\$190K			
Pocahontas	Direct Effect	396.4	\$14.1M	\$20.6M
	Indirect Effect	76.8	\$5.2M	\$8.7M
	Induced Effect	74.1	\$4.2M	\$8.1M
	Total Effect	547.2	\$23.5M	\$37.4M
Total state and local taxes	\$3.0M			
Powhatan	Direct Effect	53.6	\$1.9M	\$2.8M
	Indirect Effect	10.5	\$707K	\$1.2M
	Induced Effect	10.1	\$575K	\$1.1M
	Total Effect	74.2	\$3.2M	\$5.1M
Total state and local taxes	\$394K			
Sailor's Creek Battlefield	Direct Effect	8.1	\$322K	\$419K
	Indirect Effect	1.8	\$116K	\$199K
	Induced Effect	1.7	\$95K	\$183K
	Total Effect	11.5	\$533K	\$802K
Total state and local taxes	\$49K			
Continued on next page				

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
Twin Lakes	Direct Effect	51.3	\$1.8M	\$2.7M
	Indirect Effect	10.1	\$681K	\$1.1M
	Induced Effect	9.7	\$551K	\$1.1M
	Total Effect	71.1	\$3.1M	\$4.9M
Total state and local taxes	\$385K			
Staunton River Battlefield	Direct Effect	12.8	\$503K	\$720K
	Indirect Effect	3.0	\$199K	\$343K
	Induced Effect	2.7	\$153K	\$293K
	Total Effect	18.4	\$854K	\$1.4M
Total state and local taxes	\$87K			

{District 5 presented on next page}

TABLE 9: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 5

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
DISTRICT 5				
Claytor Lake	Direct Effect	98.6	\$3.5M	\$5.3M
	Indirect Effect	18.8	\$1.3M	\$2.1M
	Induced Effect	18.4	\$1.1M	\$2.0M
	Total Effect	135.9	\$5.8M	\$9.4M
Total state and local taxes	\$775K			
Fairy Stone	Direct Effect	44.0	\$1.9M	\$2.9M
	Indirect Effect	11.9	\$806K	\$1.4M
	Induced Effect	10.2	\$578K	\$1.1M
	Total Effect	65.8	\$3.2M	\$5.4M
Total state and local taxes	\$339K			
Occoneechee	Direct Effect	45.2	\$1.6M	\$2.4M
	Indirect Effect	8.6	\$586K	\$972K
	Induced Effect	8.5	\$480K	\$922K
	Total Effect	62.3	\$2.7M	\$4.3M
Total state and local taxes	\$363K			
Smith Mountain Lake	Direct Effect	164.4	\$5.8M	\$8.6M
	Indirect Effect	31.8	\$2.2M	\$3.6M
	Induced Effect	30.6	\$1.7M	\$3.3M
	Total Effect	226.8	\$9.7M	\$15.5M
Total state and local taxes	\$1.3M			
Staunton River	Direct Effect	42.1	\$1.6M	\$2.2M
	Indirect Effect	8.6	\$568K	\$956K
	Induced Effect	8.3	\$468K	\$899K
	Total Effect	58.9	\$2.6M	\$4.1M
Total state and local taxes	\$303K			

TABLE 10: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 6				
PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
DISTRICT 6				
Clinch River	Direct Effect	7.7	\$315K	\$528K
	Indirect Effect	1.9	\$127K	\$209K
	Induced Effect	1.7	\$96K	\$185K
	Total Effect	11.3	\$538K	\$922K
Total state and local taxes	\$79K			
Grayson Highlands	Direct Effect	62.4	\$2.2M	\$3.3M
	Indirect Effect	11.8	\$802K	\$1.3M
	Induced Effect	11.7	\$661K	\$1.3M
	Total Effect	85.9	\$3.7M	\$5.9M
Total state and local taxes	\$479K			
Hungry Mother	Direct Effect	141.9	\$5.1M	\$7.5M
	Indirect Effect	27.8	\$1.9M	\$3.1M
	Induced Effect	26.9	\$1.5M	\$2.9M
	Total Effect	196.5	\$8.5M	\$13.6M
Total state and local taxes	\$1.1M			
Natural Tunnel	Direct Effect	43.0	\$1.7M	\$2.4M
	Indirect Effect	9.5	\$634K	\$1.1M
	Induced Effect	8.9	\$505K	\$971K
	Total Effect	61.4	\$2.8M	\$4.5M
Total state and local taxes	\$311K			
New River Trail	Direct Effect	214.1	\$7.8M	\$11.4M
	Indirect Effect	44.5	\$3.0M	\$5.0M
	Induced Effect	41.6	\$2.4M	\$4.5M
	Total Effect	299.9	\$13.2M	\$20.9M
Total state and local taxes	\$1.5M			
Southwest VA Museum	Direct Effect	15.0	\$578K	\$780K
	Indirect Effect	3.2	\$211K	\$359K
	Induced Effect	3.0	\$172K	\$330K
	Total Effect	21.2	\$960K	\$1.5M
Total state and local taxes	\$99K			
Continued on next page				

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
Wilderness Road	Direct Effect	53.0	\$2.0M	\$2.7M
	Indirect Effect	11.0	\$728K	\$1.2M
	Induced Effect	10.4	\$587K	\$1.1M
	Total Effect	74.2	\$3.3M	\$5.1M
Total state and local taxes		\$366K		

ECONOMIC IMPACTS OF CAPITAL IMPROVEMENT SPENDING*

This section details the effects of capital improvement spending during 2022. These capital improvement expenditures were already included in the economic activity and economic impact models presented earlier in this report but are also teased-out separately in this section to demonstrate how such expenditures infuse money into the economies of parks' host communities.

TABLE 11A: CAPITAL IMPROVEMENTS: BEAR CREEK LAKE [SPENT: \$451K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	1.6	\$108K	\$197K	\$805K
Indirect Effect	0.9	\$67K	\$123K	
Induced Effect	0.6	\$38K	\$72K	
Total Effect	3.1	\$210K	\$388K	

State and local taxes from capital improvements: \$12K

TABLE 11B: CAPITAL IMPROVEMENTS: CALEDON [SPENT: \$364]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.0	\$87	\$159	\$649
Indirect Effect	0.0	\$54	\$99	
Induced Effect	0.0	\$30	\$58	
Total Effect	0.0	\$170	\$313	

State and local taxes from capital improvements: \$9

*In this report, a monetary amount without a "K" or "M" is smaller than \$1,000 and is represented in actual value.

TABLE 11C: CAPITAL IMPROVEMENTS: CHIPPOKES [SPENT: \$73K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.3	\$17K	\$32K	
Indirect Effect	0.2	\$11K	\$20K	
Induced Effect	0.1	\$6K	\$12K	
Total Effect	0.5	\$34K	\$62K	\$129K

State and local taxes from capital improvements: \$2K

TABLE 11D: CAPITAL IMPROVEMENTS: CLAYTOR LAKE [SPENT: \$132K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.5	\$32K	\$58K	
Indirect Effect	0.3	\$20K	\$36K	
Induced Effect	0.2	\$11K	\$21K	
Total Effect	0.9	\$62K	\$114K	\$236K

State and local taxes from capital improvements: \$3K

TABLE 11E: CAPITAL IMPROVEMENTS: DOUTHAT [SPENT: \$2.8M]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	9.9	\$682K	\$1.2M	
Indirect Effect	6.0	\$421K	\$774K	
Induced Effect	4.1	\$237K	\$455K	
Total Effect	19.6	\$1.3M	\$2.4M	\$5.1M

State and local taxes from capital improvements: \$75K

TABLE 11F: CAPITAL IMPROVEMENTS: FAIRY STONE [SPENT: \$2.3M]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	8.1	\$558K	\$1.0M	
Indirect Effect	4.9	\$344K	\$632K	
Induced Effect	3.3	\$194K	\$372K	
Total Effect	16.0	\$1.1M	\$2.0M	\$4.1M

State and local taxes from capital improvements: \$61K

TABLE 11G: CAPITAL IMPROVEMENTS: FALSE CAPE [SPENT: \$3K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.0	\$1K	\$2K	
Indirect Effect	0.0	\$361	\$598	
Induced Effect	0.0	\$365	\$700	
Total Effect	0.0	\$2K	\$3K	\$6K

State and local taxes from capital improvements: \$96

TABLE 11H: CAPITAL IMPROVEMENTS: FIRST LANDING [SPENT: \$99K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.3	\$24K	\$43K	
Indirect Effect	0.2	\$15K	\$27K	
Induced Effect	0.1	\$8K	\$16K	
Total Effect	0.7	\$46K	\$85K	\$176K

State and local taxes from capital improvements: \$3K

TABLE 11I: CAPITAL IMPROVEMENTS: HIGH BRIDGE [SPENT: \$117K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.7	\$49K	\$64K	
Indirect Effect	0.2	\$13K	\$22K	
Induced Effect	0.2	\$14K	\$26K	
Total Effect	1.1	\$76K	\$113K	\$208K

State and local taxes from capital improvements: \$4K

TABLE 11J: CAPITAL IMPROVEMENTS: HUNGRY MOTHER [SPENT: \$128K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.4	\$31K	\$56K	
Indirect Effect	0.3	\$19K	\$35K	
Induced Effect	0.2	\$11K	\$21K	
Total Effect	0.9	\$60K	\$110K	\$229K

State and local taxes from capital improvements: \$3K

TABLE 11K: CAPITAL IMPROVEMENTS: KIPTOPEKE [SPENT: \$264K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.9	\$63K	\$115K	
Indirect Effect	0.6	\$39K	\$72K	
Induced Effect	0.4	\$22K	\$42K	
Total Effect	1.8	\$123K	\$227K	\$471K

State and local taxes from capital improvements: \$7K

TABLE 11L: CAPITAL IMPROVEMENTS: LAKE ANNA [SPENT: 1K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.0	\$236	\$429	
Indirect Effect	0.0	\$146	\$268	
Induced Effect	0.0	\$82	\$157	
Total Effect	0.0	\$459	\$847	\$2K

State and local taxes from capital improvements: \$27

TABLE 11M: CAPITAL IMPROVEMENTS: NATURAL TUNNEL [SPENT: \$537K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	1.9	\$129K	\$234K	
Indirect Effect	1.1	\$80K	\$146K	
Induced Effect	0.8	\$45K	\$86K	
Total Effect	3.7	\$250K	\$462K	\$958K

State and local taxes from capital improvements: \$14K

TABLE 11N: CAPITAL IMPROVEMENTS: NEW RIVER TRAIL [SPENT: \$1.2M]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	4.1	\$280K	\$508K	
Indirect Effect	2.5	\$173K	\$317K	
Induced Effect	1.7	\$97K	\$186K	
Total Effect	8.0	\$543K	\$1.0M	\$2.1M

State and local taxes from capital improvements: \$31K

TABLE 11O: CAPITAL IMPROVEMENTS: POCAHONTAS [SPENT: \$25K]

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.1	\$6K	\$11K	
Indirect Effect	0.1	\$4K	\$7K	
Induced Effect	0.0	\$2K	\$4K	
Total Effect	0.2	\$12K	\$21K	\$44K

State and local taxes from capital improvements: \$652

TABLE 11P: CAPITAL IMPROVEMENTS: SHENANDOAH RIVER [SPENT: \$50K]

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.2	\$12K	\$22K	
Indirect Effect	0.1	\$7K	\$14K	
Induced Effect	0.1	\$4K	\$8K	
Total Effect	0.3	\$23K	\$43K	\$89K

State and local taxes from capital improvements: \$1K

TABLE 11Q: CAPITAL IMPROVEMENTS: SKY MEADOWS [SPENT: \$26K]

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.1	\$6K	\$12K	
Indirect Effect	0.1	\$4K	\$7K	
Induced Effect	0.0	\$2K	\$4K	
Total Effect	0.2	\$12K	\$23K	\$47K

State and local taxes from capital improvements: \$695

TABLE 11R: CAPITAL IMPROVEMENTS: STAUNTON RIVER BATTLEFIELD [SPENT: \$241K]

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.8	\$58K	\$105K	
Indirect Effect	0.5	\$36K	\$65K	
Induced Effect	0.3	\$20K	\$38K	
Total Effect	1.7	\$112K	\$207K	\$429K

State and local taxes from capital improvements: \$6K

TABLE 11s: CAPITAL IMPROVEMENTS: WIDEWATER [SPENT: \$3.4M]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	20.8	\$1.4M	\$1.8M	
Indirect Effect	4.7	\$388K	\$642K	
Induced Effect	6.7	\$392K	\$752K	
Total Effect	32.2	\$2.2M	\$3.2M	

State and local taxes from capital improvements: \$102K

TABLE 11t: CAPITAL IMPROVEMENTS: YORK RIVER [SPENT: \$16K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.1	\$4K	\$7K	
Indirect Effect	0.0	\$2K	\$4K	
Induced Effect	0.0	\$1K	\$3K	
Total Effect	0.1	\$7K	\$14K	

State and local taxes from capital improvements: \$415

{Operational spending section begins on next page}

ECONOMIC IMPACTS OF OPERATIONAL SPENDING

This section details the effects of operational spending not supported by visitor revenues during 2022. This operational spending was already included in the economic activity and economic impact models discussed earlier in this report but is also teased-out separately in this section to demonstrate how such operational spending infuses money into the economies of parks' host communities. Because the majority of parks are located in areas of the Commonwealth in which economic activity is recorded below statewide metrics, such operational-related spending can be a boon to these economies. The development of Clinch River State Park in far southwest Virginia will likely further illustrate this point in the coming years as the park will be a blue ways design [land parcels connected by water] in one of the most economically-recessed areas of the state (Grizzle, 2019).

TABLE 12: ECONOMIC IMPACTS OF NON-VISITOR SUPPORTED PARK OPERATIONAL SPENDING				
(PORTION OF PARK BUDGET DERIVED FROM VISITOR REVENUE REMOVED TO AVOID DOUBLE COUNTING)				
PARK	TOTAL VISITOR REVENUE	PARK OPERATIONAL EXPENDITURE	NET EXPENDITURE FROM NON-VISITOR SOURCES *	ECONOMIC IMPACT FROM OPERATIONAL SPENDING
DISTRICT 1				
Belle Isle	\$318K	\$714K	\$396K	\$685K
Chippokes Plantation	\$598K	\$896K	\$298K	\$514K
False Cape	\$25K	\$518K	\$493K	\$888K
First Landing	\$3.2M	\$2.3M	\$0	Reflected in park revenue
Kiptopeke	\$1.6M	\$1.1M	\$0	Reflected in park revenue
Machicomoco	\$203K	\$230K	\$27K	\$46K
Middle Peninsula	\$0	\$102	\$102	\$176
York River	\$128K	\$589K	\$460K	\$795K
DISTRICT 2				
Caledon	\$47K	\$338K	\$291K	\$524K
Lake Anna	\$1.2M	\$1.2M	\$13K	\$24K
Leesylvania	\$681K	\$1.3M	\$659K	\$1.2M
Mason Neck	\$193K	\$675K	\$483K	\$903K
Westmoreland	\$1.1M	\$1.6M	\$500K	\$864K
Widewater	\$49K	\$646K	\$597K	\$1.1M
Continued on next page				

PARK (CONTINUED)	TOTAL VISITOR REVENUE	PARK OPERATIONAL EXPENDITURE	EXPENDITURES FROM NON-VISITOR SOURCES	ECONOMIC IMPACT FROM OPERATIONAL SPENDING
DISTRICT 3				
Douthat	\$1.4M	\$2.1M	\$698K	\$1.2M
James River	\$750K	\$1.1M	\$335K	\$580K
Natural Bridge	\$1.7M	\$1.8M	\$56K	\$97K
Seven Bends	\$22K	\$428K	\$405K	\$730K
Shenandoah River	\$1.1M	\$1.3M	\$172K	\$309K
Sky Meadows	\$327K	\$648K	\$321K	\$601K
DISTRICT 4				
Bear Creek Lake	\$573K	\$983K	\$410K	\$708K
High Bridge Trail	\$87K	\$671K	\$584K	\$1.0M
Holliday Lake	\$260K	\$580K	\$321K	\$554K
Pocahontas	\$2.4M	\$2.4M	\$59K	\$106K
Powhatan	\$288K	\$531K	\$243K	\$438K
Sailor's Creek Battlefield	\$15K	\$367K	\$352K	\$609K
Staunton River Battlefield	\$6K	\$252K	\$246K	\$407K
Twin Lakes	\$522K	\$833K	\$311K	\$514K
DISTRICT 5				
Claytor Lake	\$1.8M	\$1.7M	\$0	Reflected in park revenue
Fairy Stone	\$776K	\$1.2M	\$448K	\$742K
Occonechee	\$1.0M	\$1.2M	\$182K	\$301K
Smith Mountain Lake	\$1.2M	\$1.2M	\$0	Reflected in park revenue
Staunton River	\$429K	\$1.2M	\$815K	\$1.3M
DISTRICT 6				
Clinch River	\$9K	\$288K	\$279K	\$463K
Grayson Highlands	\$1.1M	\$1.1M	\$0	Reflected in park revenue
Hungry Mother	\$1.6M	\$2.4M	\$815K	\$1.3M
Natural Tunnel	\$649K	\$1.6M	\$983K	\$1.6M
New River Tail	\$339K	\$1.8M	\$1.4M	\$2.4M
Southwest Virginia	\$46K	\$500K	\$454K	\$752K
Wilderness Road	\$46K	\$973K	\$927K	\$1.5M
*In the net expenditure column, an entry of zero represents a situation in which operating revenues exceeded operating expenses.				

DISCUSSION

The findings of this economic activity and impact study illuminate the importance of the state park system to the economy of Virginia. The economic activity was approximately \$478.7M; whereas, the economic impact was estimated at \$364.2M in 2022. The economic activity spawned by the park system supported approximately 3,914 jobs, \$171.4M in wage and salary income, and \$274.4M in value-added effects. Moreover, economic activity stimulated by Virginia State Parks generated approximately \$25.6M in state and local tax revenues – approximately 60 percent to the state and the remainder returned to local municipalities. As such, roughly \$1.07 in tax revenues were generated for every dollar of tax money spent in the park system.

The difference between the economic activity amount (includes spending by local residents) and the economic impact amount (does not include spending by local residents) illustrates that Virginia's State Parks not only attract fresh-money from outside of the area, but also serve to limit the economic leakage of money from within Virginia. In other words, the parks help entice locals to spend their money inside the Commonwealth as opposed to pursuing such recreational outings in other states/regions.

In a state park economic impact study, it is important to understand that all modeling inputs are dynamic. That is, according to Crompton (1993), the validity and reliability of an economic impact study depend on: 1) the accuracy of visitor spending estimates; 2) adherence to 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, customized spending profiles were developed by the research team by collecting spending data from 3,802 park visitors during 2016. Second, regarding the multiplier coefficients, the most recent IMPLAN multipliers were utilized. Third, in terms of attendance estimation, as described earlier in this report, during 2017 park staff recorded 762 vehicle observation hours as well as 679 visitor interviews to calibrate model estimations regarding the average number of occupants per vehicle (day use; camping; cabins) and the ratio of local, non-local and non-resident visitors. In any state park system, these modeling inputs should 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. To state differently, this study is part of an overall effort that encompasses continuous refinement of all modeling inputs.

Not only do Virginia State Parks produce economic-related results, but they also help foster a host of other societal benefits that cannot be incorporated into econometric modeling. They each serve as settings for rest, relaxation, recreation, and 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.

Everyone values parks - even non-visitors. That is, even people who do not visit parks, value their existence and want to see them preserved (Greenley, Walsh, and Young, 1981; Institute for Service Research, 2018). Therefore, parks have an *existence value* by which even those who do not visit are typically glad that they exist. In addition, parks have a *bequest value* in that both visitors and non-visitors want parks preserved for future generations.

As demonstrated during the COVID-19 pandemic, state parks also help insulate Virginia's tourism infrastructure from economic cycles. When the economy flourishes, people visit state parks... when the economy contracts, people STILL visit state parks. Thus, many other businesses within Virginia's tourism infrastructure (e.g. restaurants, gas stations, etc...) often benefit from the steady, relatively recession-resistant flow of visitors to Virginia's State Parks. Along these lines, many of Virginia's State Parks help inject money into economically-strained areas of Virginia. In fact, the majority of Virginia's State Parks are located in areas that are below the statewide average on commonly employed economic indicators such as median income. Eventually, after enough years of data have been gathered, this buffering of economic cycles will likely become evident in longitudinal modeling.

Another benefit of the state park system 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 that 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 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 real estate prices. For example, in rural areas, variables such as

road frontage, easements, soil, and timber availability can influence property-specific pricing. In oceanfront areas (e.g. First Landing State Park), factors such as proximity to weekly rentals, ocean views, proximity to a traffic light, and availability of parking can influence property-specific pricing.

While this study estimated many economic impacts of Virginia's State Parks such as jobs, labor income, value-added, and state and local taxes generated, it is prudent to note that a number of other benefits (both tangible and intangible) could not be included in the modeling. For example, because parks contribute to local residents' quality of life, they are an amenity that is considered in some business expansion decisions. In fact, the quality of parks and recreation in an area is one of the top three criteria cited in numerous studies when businesses are making relocation decisions (<https://www.nrpa.org/uploadedFiles/nrpa.org/Advocacy/Resources/Parks-Recreation-Essential-Public-Services-January-2010.pdf>).

{End of narrative}

INVESTIGATOR BIO

Dr. Vincent Magnini was ranked as one of the top 12 most prolific hospitality researchers worldwide in the most recently published global ranking study. He is a U.S. Fulbright Scholar and has published seven books including a new release in 2020 for park management and rangers titled *An Ecotourism Provider's Handbook* (with Donald Forgione). Dr. Magnini has also been featured on National Public Radio's *With Good Reason, All Things Considered, Pulse on the Planet* and cited in the *New York Times* and *Washington Post*.

Examples of economic impact studies completed by Dr. Magnini include:

- The Economic Impacts of the Audacy Oceanfront Concert Series held in conjunction with the 60th Annual East Coast Surfing Championships
- The Economic Impacts of Virginia's Civil Rights in Education Heritage Trail (with Chuck Wyatt)
- The Economic and Fiscal Impacts of Doe Mountain Recreational Area (with Chuck Wyatt)
- The Economic Impacts of the Virginia Capital Trail (with Lauren Pilkington and Chuck Wyatt)
- The Economic Impacts of Agritourism in Loudoun County, VA
- The Economic Impacts of Michigan's Ports and Harbors (with Dr. John Crotts)
- Potential Economic Impacts of a Shooting and Archery Range Complex in the SRRA Area (with Chuck Wyatt)
- Virginia State Parks Economic Impact Report (conducted annually)
- The Economic Impacts of the Southern Virginia Higher Education Center
- The Economic Impacts of Southside Virginia Community College
- Potential Economic Impacts and Factors Contributing to the Success of Rail-to-Trail Conversions (with Chuck Wyatt)
- The Economic Impacts of Spearhead Trails (with Chuck Wyatt)
- The Fiscal and Economic Impacts of Virginia's Agritourism Industry (with Esra Calvert and Dr. Martha Walker)
- The Economic Significance and Impacts of West Virginia's State Parks and Forests (with Dr. Muzzo Uysal)

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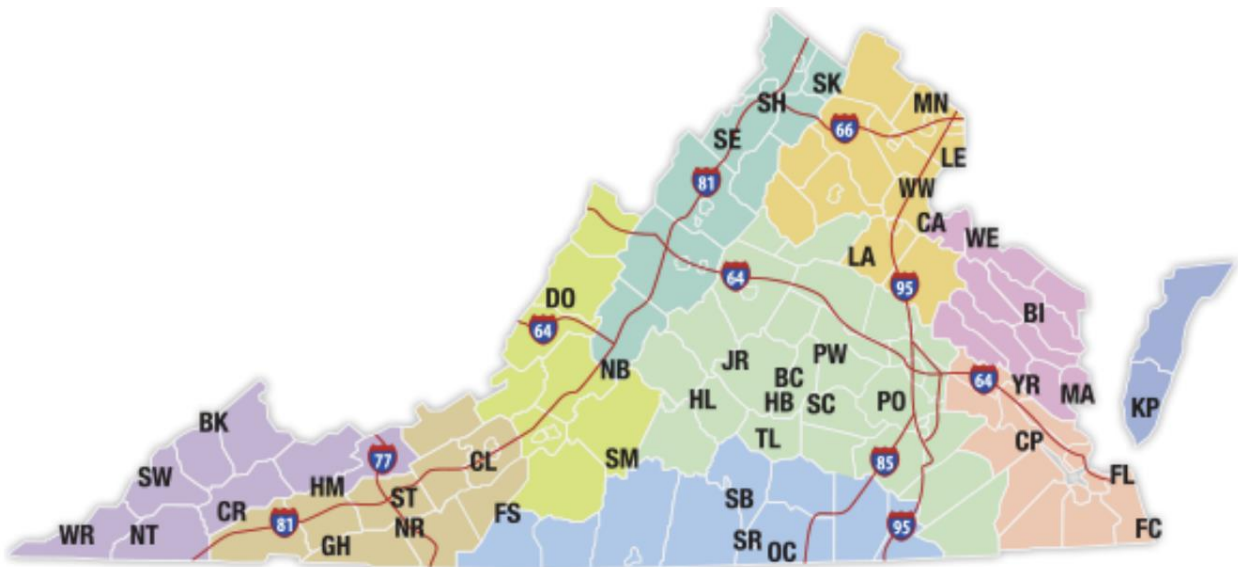
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APPENDICES

APPENDIX A: MAP OF VIRGINIA STATE PARKS



Bear Creek Lake (BC)	Hungry Mother (HM)	Seven Bends (SE)
Belle Isle (BI)	James River (JR)	Shenandoah River (SH)
Breaks Interstate (BK) *	Kiptopeke (KP)	Shot Tower (ST)
Caledon (CA)	Lake Anna (LA)	Sky Meadows (SK)
Chippokes Plantation (CP)	Leesylvania (LE)	Smith Mountain Lake (SM)
Clayton Lake (CL)	Mason Neck (MN)	Southwest Virginia Museum Historical (SW)
Clinch River (CR) **	Machicomoco (MA)	Staunton River (SR)
Douthat (DO)	Natural Bridge (NB)	Staunton River Battlefield (SB)
Fairy Stone (FS)	Natural Tunnel (NT)	Twin Lakes (TL)
False Cape (FC)	New River Trail (NR)	Westmoreland (WE)
First Landing (FL)	Occoneechee (OC)	Widewater (WW)
Grayson Highlands (GH)	Pocahontas (PO)	Wilderness Road (WR)
High Bridge Trail (HB)	Powhatan (PW)	York River (YR)
Holliday Lake (HL)	Sailor's Creek Battlefield Historic (SC)	

Source of map: www.dcr.virginia.gov/state-parks/find-a-park

APPENDIX B: GLOSSARY OF TERMS

{Many of the definitions in this glossary are paraphrased directly from Stynes et al. (2000) MGM2 users' manual}

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

Economic activity – economic output modeling that includes all visitor spending and consequent multiplier effects by both locals and non-locals as well as any money spent by parks that was not supported by visitor spending. Consequently, economic activity figures represent all of the economic activity stimulated by a park location within the state.

- **Unadjusted economic activity** - economic activity output figures computed using statewide IMPLAN multipliers.
- **Adjusted economic activity** – calibrated economic activity output figures based upon whether a given park's county(ies) has economic activity above or below the state average.

Economic impact – economic output modeling that includes all visitor spending and consequent multiplier effects by 1) in-state residents traveling 50 miles or more (one-way) to visit the park; and 2) all out-of-state visitors. In addition, economic impact models include capital improvements and operational expenditures not derived from visitor spending. Thus, economic impact figures reflect all of the “fresh money” entering an area's economy as a result of a given state park.

- **Unadjusted economic impact** - economic impact output figures computed using statewide IMPLAN multipliers.
- **Adjusted economic impact** – calibrated economic impact output figures based upon whether a given park's county(ies) has economic activity above or below the state average. Adjusted economic impact figures are also reduced by 12% (Magnini and Uysal, 2015a) to account for spending by park visitors who likely would have traveled and spent money in the state regardless of whether the park existed.

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 more than 500 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.

Multipliers – these estimates 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 dollars. There are two types of secondary effects: indirect and induced (see previously listed definitions).

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 state/national economy because it avoids the double counting of intermediate sales and incorporates only the ‘value-added’ by the region to final products.

{END OF REPORT}