

Economic Impacts of Mountain Bike Trail Events and Festivals in West Virginia

WVU Extension Service Working Paper FCD-MTB-0624

Daniel Eades, Associate Professor and Extension Rural Development Specialist
Doug Arbogast, Professor and Extension Rural Tourism Specialist

West Virginia University Extension Service
West Virginia University
Morgantown WV 26506

June 2024

Introduction

Mountain biking and mountain biking facilities can bring an array of benefits to rural communities. They leverage communities' natural assets to create places that are attractive to visitors, businesses, and both new and current residents. Specific, documented benefits include health benefits for local users, increased tourism and economic development opportunities, and benefits to the local environment^{1,2}.

Since 2018, West Virginia University Extension has been tracking the economic impacts of mountain biking activities across the state, specifically spending at trail events including races and festivals. This report describes the economic impact of several of these events from the 2023 season including Big Bear's Bike Bash, the Canaan Mountain Bike Festival, the WV Enduro Series, the WV Interscholastic Cycling League's (NICA) youth race series, and the Downhill Southeast race held at Snowshoe Resort.

Given the diffuse nature of trail riding, estimating rider spending can be challenging. These events provide an opportunity to collect useful data that helps quantify spending and the economic impact generated by riders in the state. The results from these analyses have been used to justify significant investment in trail infrastructure across West Virginia. We are grateful to the event and race series organizers and especially the riders who took the time to provide the data necessary to undertake this research. We hope that the results will continue to inform policy and trail investment decisions that allow WV communities to showcase their unique assets and benefit from the growing outdoor recreation economy.

2023 West Virginia Mountain Bike Festival and Event Survey Results

To better understand the preferences and spending patterns of mountain bikers in West Virginia, surveys were collected by West Virginia University faculty and event organizers. Surveys were collected online using the Qualtrics survey tool through a link sent from event organizers via email to event participants shortly following the event. Survey responses were received from the Canaan Mountain Bike Festival (52), Big Bear Bike Bash (161), Cacapon State Park Enduro Race (63), Slatyfork Enduro Race (31), Downhill Southeast Snowshoe Race (67), and West Virginia Interscholastic Cycling League Race Series (144). Local events drew more than **3,000 participants**. Surveys were collected from a total of **518 attendees** (see Table 1).

Table 1. Survey Collection by Event

2023 Event	Surveys Collected	Rider Attendance
Canaan Mountain Bike Festival	52	~300
Big Bear Bike Bash	161	~800
Cacapon State Park Enduro Race	63	230
Slatyfork Enduro Race	31	86
Downhill Southeast Snowshoe Race	67	338
West Virginia Interscholastic Cycling League	144	
Race #1 Canaan August 27-28		320
Race #2 Big Bear September 10-11		285
Race #3 Cacapon September 24-25		276
Race #4 The Summit October 8-9		302
Race #5 Twin Falls October 22-23		279
Total	518	
*Represents paying event visitors		

Estimated Economic Contribution of Mountain Biking Activities in West Virginia

The economic impacts of the West Virginia mountain biking events are estimated using a state specific model generated using IMPLAN’s modeling software³, an industry standard input-output model of the economy. Expenditures by riders generate direct spending in the local economy. This direct spending stimulates additional purchases and causes impacts along the supply chain. For example, increased demand for business inputs (utilities, office supplies, legal services) will result in additional rounds of purchases by local businesses (indirect impacts); employees will also make purchases (induced impacts). The combined direct, indirect, and induced impacts represent the total economic impact of these activities.

Traditionally, local spending is excluded when calculating economic *impacts*, as spending by locals likely serves as an alternative to other entertainment and recreation spending that would have occurred in the state/region. For this analysis, we include the spending by local visitors/riders. Therefore, the results represent the economic *contribution* of these events to the state’s economy, or how much economic activity was associated with the events.

Average per rider spending estimates, total event spending estimates, and the economic contribution of the events are presented in the tables below:

Canaan Mountain Bike Festival

Table 2. Average Per Rider Spending Estimates by Category, 2023 Canaan Mountain Bike Festival

Category of Event-Related Expenditure	
Overnight Lodging	\$78
Groceries	\$31
Dining	\$67
Retail	\$42
Gear	\$11
Fuel	\$31
TOTAL PER RIDER SPENDING	\$259
*Does not include event admission	

Table 3. Total Estimated Rider Spending by Category, 2023 Canaan Mountain Bike Festival

	TOTAL SPENDING
Number of Riders	300
Overnight Lodging	\$23,313
Groceries	\$9,419
Dining	\$19,985
Retail	\$12,459
Gear	\$3,348
Fuel	\$9,297
TOTAL SPENDING	\$77,821

Spending by participating riders totaled nearly \$78,000 and is estimated to generate \$54,600 in direct spending impacts in the state’s economy (Table 4). This spending generates nearly \$31,000 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute approximately \$85,400 in business volume, support one local job, and generate nearly \$27,000 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$7,450

Table 4. Estimated Economic Contribution of 2023 Canaan Mountain Bike Festival

	Direct Impact	Indirect & Induced Impacts	Total Economic Impact
Output (Sales)	\$54,638	\$30,753	\$85,391
Employment	1	0	1
Labor Income	\$17,560	\$9,231	\$26,791
State & Local Taxes	--	--	\$7,451
*The direct impact is less than the estimated \$77,821 due to the application of retail margins.			

Big Bear Bike Bash

Table 5. Average Per Rider Spending Estimates by Category, 2023 Big Bear Bike Bash

Category of Event-Related Expenditure	
Overnight Lodging	\$56
Groceries	\$34
Dining	\$18
Retail	\$19
Gear	\$7
Fuel	\$36
TOTAL PER RIDER SPENDING	\$170
*Does not include event admission	

Table 6. Total Estimated Rider Spending by Category, 2023 Big Bear Bike Bash

	TOTAL SPENDING
Number of Riders	800
Overnight Lodging	\$44,961
Groceries	\$27,192
Dining	\$14,443
Retail	\$15,102
Gear	\$5,664
Fuel	\$28,994
TOTAL SPENDING	\$136,356

Spending by participating riders totaled more than \$136,000 and is estimated to generate nearly \$84,000 in direct spending impacts in the state's economy (Table 7). This spending generates \$46,000 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute more than \$130,000 in business volume, support one (1) local job, and generate \$41,300 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$12,100.

Table 7. Estimated Economic Contribution of 2023 Big Bear Bike Bash

	Direct Impact	Indirect & Induced Impacts	Total Economic Impact
Output (Sales)	\$83,824	\$46,230	\$130,055
Employment	1	0	1
Labor Income	\$27,465	\$13,876	\$41,341
State & Local Taxes	--	--	\$12,136
*The direct impact is less than the estimated \$136,356 due to the application of retail margins.			

WV Enduro Series

Table 8. Average Per Rider Spending Estimates per Event, by Spending Category, 2023 Slatyfork and Cacapon Enduro Races

Category of Event-Related Expenditure	Slatyfork	Cacapon
Overnight Lodging	\$65	\$62
Groceries	\$40	\$21
Dining	\$19	\$37
Retail	\$10	\$9
Gear	\$10	\$5
Fuel	\$50	\$39
TOTAL PER RIDER SPENDING	\$193	\$173
*Does not include event admission		

Table 9. Total Estimated Spending per Event, by Spending Category, 2023 Slatyfork and Cacapon Enduro Races

	Slatyfork	Cacapon	TOTAL SPENDING
Number of Riders	86	230	316
Overnight Lodging	\$5,560	\$14,335	\$19,895
Groceries	\$3,448	\$4,754	\$8,202
Dining	\$1,647	\$8,524	\$10,171
Retail	\$821	\$2,053	\$2,874
Gear	\$817	\$1,097	\$1,914
Fuel	\$4,262	\$8,988	\$13,250
TOTAL SPENDING	\$16,555	\$39,751	\$56,306

Spending by participating riders across the two events totaled nearly \$56,300 and is estimated to generate \$38,000 in direct spending impacts in the state's economy (Table 10). This spending generates more than \$11,000 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute more than \$59,000 in business volume, generate \$18,500 in wage and proprietor income, and generate approximately \$5,000 in state and local taxes.

Table 10. Estimated Economic Contribution of 2023 Slatyfork and Cacapon Enduro Races

		Direct Impact	Indirect & Induced Impacts	Total Economic Impact
Slatyfork	Output (Sales)	\$10,138	\$5,594	\$15,732
	Employment	0	0	0
	Labor Income	\$3,307	\$1,675	\$4,983
	State & Local Taxes	--	--	\$1,463
Canaan	Output (Sales)	\$27,959	\$15,505	\$43,464
	Employment	0	0	0
	Labor Income	\$8,923	\$4,647	\$13,570
	State & Local Taxes	--	--	\$3,816
Total	Output (Sales)	\$38,097	\$11,426	\$59,196
	Employment	0	0	0
	Labor Income	\$12,230	\$3,355	\$18,553
	State & Local Taxes	--	--	\$5,279
*The direct impact is less than the estimated \$56,306 due to the application of retail margins.				

Downhill Southeast Snowshoe

Table 8. Average Per Rider Spending Estimates per Event, by Spending Category, 2023 Downhill Southeast Snowshoe Race

Category of Event-Related Expenditure	Downhill SE Snowshoe
Overnight Lodging	\$197
Groceries	\$63
Dining	\$88
Retail	\$28
Gear	\$19
Fuel	\$66
TOTAL PER RIDER SPENDING	\$462
*Does not include event admission	

Table 9. Total Estimated Spending per Event, by Spending Category, 2023 Downhill Southeast Snowshoe Race

	TOTAL SPENDING
Number of Riders	338
Overnight Lodging	\$66,505
Groceries	\$21,230
Dining	\$29,819
Retail	\$9,537
Gear	\$6,535
Fuel	\$22,444
TOTAL SPENDING	\$156,070

Spending by participating riders totaled \$156,000 and is estimated to generate \$115,600 in direct spending impacts in the state's economy (Table 10). This spending generates nearly \$63,500 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute approximately \$179,000 in business volume, support one (1) local job, and generate over \$56,000 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$15,700

Table 10. Estimated Economic Contribution of 2023 Downhill Southeast Snowshoe Race

	Direct Impact	Indirect & Induced Impacts	Total Economic Impact
Output (Sales)	\$115,656	\$63,491	\$179,147
Employment	1	0	1
Labor Income	\$37,631	\$19,039	\$56,669
State & Local Taxes	--	--	\$15,734
*The direct impact is less than the estimated \$156,070 due to the application of retail margins.			

WVICL NICA Series

Table 11. Average Per Rider Spending Estimates per Event, by Spending Category, 2023 NICA Races

Category of Event-Related Expenditure	Canaan	Big Bear	Cacapon	The Summit	Twin Falls
Overnight Lodging	\$146	\$17	\$178	\$88	\$100
Groceries	\$56	\$27	\$44	\$54	\$67
Dining	\$68	\$10	\$37	\$39	\$46
Retail	\$24	\$7	\$13	\$17	\$18
Gear	\$20	\$17	\$10	\$15	\$2
Fuel	\$64	\$37	\$56	\$67	\$92
TOTAL PER RIDER SPENDING	\$379	\$115	\$337	\$281	\$325
*Does not include event admission					

Total spending across all events totaled \$422,700. Spending ranged from \$121,355 in high amenity locations like Canaan Valley and Cacapon (\$93,050) State Parks to the mid-to-low \$30,000 in lower amenity destinations like Big Bear.

Table 12. Total Estimated Spending per Event, by Spending Category, 2022 NICA Races

	Canaan	Big Bear	Cacapon	The Summit	Twin Falls	TOTAL SPENDING
Number of Riders	320	285	276	302	279	
Overnight Lodging	\$46,864	\$4,839	\$49,157	\$26,714	\$27,978	\$155,552
Groceries	\$17,967	\$7,786	\$12,085	\$16,226	\$18,678	\$72,741
Dining	\$21,820	\$2,865	\$10,124	\$11,781	\$12,710	\$59,300
Retail	\$7,585	\$1,959	\$3,617	\$5,166	\$4,960	\$23,288
Gear	\$6,490	\$4,928	\$2,718	\$4,623	\$620	\$19,379
Fuel	\$20,629	\$10,508	\$15,347	\$20,226	\$25,730	\$92,440
TOTAL SPENDING	\$121,355	\$32,885	\$93,050	\$84,735	\$90,675	\$422,700

Spending by participating riders is estimated to generate \$280,000 in direct spending impacts in the state's economy (Table 13). This spending generates more than \$150,000 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute approximately \$432,000 in business volume, support four (4) local jobs, and generate nearly \$137,000 in wage and proprietor income. Tax impacts to the state and local economy are estimated at nearly \$37,000.

Table 13. Estimated Economic Contribution of 2023 NICA Races

	Direct Impact	Indirect & Induced Impacts	Total Economic Impact
Output (Sales)	\$280,349	\$151,587	\$431,937
Employment	3	1	4
Labor Income	\$91,127	\$45,473	\$136,600
State & Local Taxes	--	--	\$36,842
*The direct impact is less than the estimated \$422,700 due to the application of retail margins.			

Total Contribution of 2023 Mountain Biking Events

Spending by participating riders in the events described above generated more than half a million (\$572,500) in direct spending impacts in the state's economy (Table 14). In total, these expenditures contribute more than \$885,500 in business volume, support seven (7) local jobs, and generate nearly \$280,000 in wage and proprietor income. Tax impacts to the state and local economy are estimated at more than \$77,000.

Table 14. Estimated Economic Contribution of 2023 Mountain Bike Festivals and Events

	Direct Impact	Indirect & Induced Impacts	Total Economic Impact
Output (Sales)	\$572,564	\$303,488	\$885,725
Employment	5	1	7
Labor Income	\$186,013	\$90,974	\$279,953
State & Local Taxes	--	--	\$77,442

¹ <https://www.scribd.com/document/260028699/Economic-Impacts-of-MTB-pptx-pdf>

² For a review of the community economic development impacts of mountain biking and mountain bike tourism see [Eades and Arbogast \(2019\)](#).

³ Additional information about IMPLAN can be found at <http://www.implan.com/>