

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

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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 2022 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 2022 UCI Mercedes-Benz Mountain Bike World Cup Downhill and Cross Country Races 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.

2022 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 (41), Big Bear Bike Bash (151), Cacapon State Park Enduro Race (65), Valley Falls Enduro Race (15), Slatyfork Enduro Race (25), Snowshoe Enduro Race (29), Snowshoe UCI World Cup (321), and West Virginia Interscholastic Cycling League Race Series (98). Local events drew more than 2,500 participants; the World Cup event drew 6,000 attendees including 4,500 paying visitors. Surveys were collected from a total of 766 attendees (see Table 1).

Table 1. Survey Collection by Event

| 2022 Event | Surveys Collected | Rider Attendance |
|--|--------------------------|-------------------------|
| Canaan Mountain Bike Festival | 41 | ~300 |
| Big Bear Bike Bash | 151 | ~800 |
| Cacapon State Park Enduro Race | 65 | 230 |
| Valley Falls Enduro Race | 15 | ~100 |
| Slatyfork Enduro Race | 25 | 86 |
| Snowshoe Enduro Race | 29 | ~116 |
| Snowshoe UCI World Cup | 321 | ~4,500* |
| West Virginia Interscholastic Cycling League | 98 | |
| Race #1 Canaan August 27-28 | | 255 |
| Race #2 Big Bear September 10-11 | | 226 |
| Race #3 Cacapon September 24-25 | | 217 |
| Race #4 North Bend October 8-9 | | 229 |
| Race #5 Twin Falls October 22-23 | | 217 |
| Total | 766 | |
| *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, 2022 Canaan Mountain Bike Festival

| | |
|---------------------------------------|-----------------|
| Category of Event-Related Expenditure | |
| Overnight Lodging | \$56.38 |
| Groceries | \$51.52 |
| Dining | \$68.36 |
| Retail | \$47.89 |
| Gear | \$36.38 |
| Fuel | \$50.28 |
| Car Rental | \$0.23 |
| Other | \$14.72 |
| TOTAL PER RIDER SPENDING | \$325.76 |
| *Does not include event admission | |

Table 3. Total Estimated Rider Spending by Category, 2022 Canaan Mountain Bike Festival

| | |
|-----------------------|-----------------------|
| | TOTAL SPENDING |
| Number of Riders | 300 |
| Overnight Lodging | \$16,914 |
| Groceries | \$15,455 |
| Dining | \$20,508 |
| Retail | \$14,368 |
| Gear | \$10,913 |
| Fuel | \$15,083 |
| Car Rental | \$69.00 |
| Other | \$4,415 |
| TOTAL SPENDING | \$97,727 |

Spending by participating riders totaled nearly \$98,000 and is estimated to generate \$61,000 in direct spending impacts in the state’s economy (Table 4). This spending generates approximately \$34,000 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute approximately \$95,000 in business volume, support one local job, and generate nearly \$30,000 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$8,375

Table 4. Estimated Economic Contribution of 2022 Canaan Mountain Bike Festival

| | Direct Impact | Indirect & Induced Impacts | Total Economic Impact |
|--|---------------|----------------------------|-----------------------|
| Output (Sales) | \$60,788* | \$34,077 | \$94,864 |
| Employment | 1 | 0 | 1 |
| Labor Income | \$19,232 | \$10,625 | \$29,857 |
| State & Local Taxes | -- | -- | \$8,376 |
| *The direct impact is less than the estimated \$97,727 due to the application of retail margins. | | | |

Big Bear Bike Bash

Table 5. Average Per Rider Spending Estimates by Category, 2022 Big Bear Bike Bash

| | |
|---------------------------------------|-----------------|
| Category of Event-Related Expenditure | |
| Overnight Lodging | \$16.41 |
| Groceries | \$34.66 |
| Dining | \$17.37 |
| Retail | \$5.96 |
| Gear | \$17.10 |
| Fuel | \$43.13 |
| Car Rental | \$0.29 |
| Other | \$0.00 |
| TOTAL PER RIDER SPENDING | \$134.92 |
| *Does not include event admission | |

Table 6. Total Estimated Rider Spending by Category, 2022 Big Bear Bike Bash

| | |
|-----------------------|-----------------------|
| | TOTAL SPENDING |
| Number of Riders | 800 |
| Overnight Lodging | \$13,127 |
| Groceries | \$27,727 |
| Dining | \$13,894 |
| Retail | \$4,771 |
| Gear | \$13,683 |
| Fuel | \$34,504 |
| Car Rental | \$232 |
| Other | \$0 |
| TOTAL SPENDING | \$107,938 |

Spending by participating riders totaled nearly \$108,000 and is estimated to generate \$53,500 in direct spending impacts in the state's economy (Table 7). This spending generates nearly \$31,000 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute more than \$84,000 in business volume, support one (1) local job, and generate nearly \$26,700 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$8,500.

Table 7. Estimated Economic Contribution of 2022 Big Bear Bike Bash

| | Direct Impact | Indirect & Induced Impacts | Total Economic Impact |
|---|---------------|----------------------------|-----------------------|
| Output (Sales) | \$53,520* | \$30,790 | \$84,310 |
| Employment | 1 | 0 | 1 |
| Labor Income | \$17,190 | \$9,487 | \$26,677 |
| State & Local Taxes | -- | -- | \$8,567 |
| *The direct impact is less than the estimated \$107,938 due to the application of retail margins. | | | |

2022 Snowshoe Mercedes-Benz UCI Mountain Bike World Cup⁴

Table 6. Total Estimated Spending by Category, 2022 Snowshoe Mercedes-Benz UCI Mountain Bike World Cup

| | TOTAL SPENDING |
|-----------------------|--------------------|
| Admission | \$199,485 |
| Overnight Lodging | \$1,041,755 |
| Groceries | \$177,320 |
| Dining | \$332,475 |
| Retail | \$243,815 |
| Gear | \$177,320 |
| Fuel | \$44,330 |
| Other | \$199,485 |
| TOTAL SPENDING | \$2,216,500 |

Spending by event attendees totaled more than \$2.2 million (Table 7). This spending generates nearly \$1 million in secondary impacts as these dollars are re-spent. In total, these expenditures contribute more than \$3.2 million in business volume, support 24 local jobs, and generate more than \$837,000 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$83,500.

Table 7. Estimated Economic Contribution of the 2022 Snowshoe Mercedes-Benz UCI Mountain Bike World Cup

| | Direct Impact | Indirect & Induced Impacts | Total Economic Impact |
|---------------------|---------------|----------------------------|-----------------------|
| Output (Sales) | \$2.2 million | \$0.9 million | \$3.2 million |
| Employment | 18 | 6 | 24 |
| Labor Income | \$543,700 | \$293,900 | \$837,600 |
| State & Local Taxes | -- | -- | \$83,500 |

WV Enduro Series

Table 8. Average Per Rider Spending Estimates per Event, by Spending Category, 2022 Enduro Series

| Category of Event-Related Expenditure | Slatyfork | Snowshoe | Valley Falls | Cacapon |
|---------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Overnight Lodging | \$71.85 | \$137.77 | \$39.50 | \$60.32 |
| Groceries | \$36.36 | \$37.29 | \$16.73 | \$16.51 |
| Dining | \$36.20 | \$56.90 | \$40.98 | \$33.81 |
| Retail | \$2.46 | \$16.31 | \$8.39 | \$2.96 |
| Gear | \$15.87 | \$12.23 | \$7.14 | \$0.71 |
| Fuel | \$50.80 | \$42.38 | \$47.92 | \$35.62 |
| Other | \$4.35 | \$0.00 | \$11.90 | \$0.00 |
| TOTAL PER RIDER SPENDING | \$217.88 | \$302.89 | \$172.56 | \$149.93 |
| *Does not include event admission | | | | |

Table 9. Total Estimated Spending per Event, by Spending Category, 2022 Enduro Series

| | Slatyfork | Snowshoe | Valley Falls | Cacapon | TOTAL SPENDING |
|-----------------------|-----------------|-----------------|-----------------|-----------------|------------------|
| Number of Riders | 86 | 116 | 100 | 230 | |
| Overnight Lodging | \$6,179 | \$15,922 | \$3,950 | \$13,874 | \$39,925 |
| Groceries | \$3,127 | \$4,310 | \$1,673 | \$3,798 | \$12,907 |
| Dining | \$3,113 | \$6,576 | \$4,098 | \$7,775 | \$21,562 |
| Retail | \$212 | \$1,885 | \$839 | \$682 | \$3,618 |
| Gear | \$1,365 | \$1,414 | \$714 | \$163 | \$3,655 |
| Fuel | \$4,369 | \$4,898 | \$4,792 | \$8,193 | \$22,251 |
| Other | \$374 | \$0 | \$1,190 | \$0 | \$1,564 |
| TOTAL SPENDING | \$18,738 | \$35,005 | \$17,256 | \$34,485 | \$105,484 |

Spending by participating riders totaled nearly \$105,500 and is estimated to generate \$76,250 in direct spending impacts in the state's economy (Table 10). This spending generates nearly \$43,000 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute approximately \$118,900 in business volume, support one (1) local job, and generate over \$38,000 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$10,300

Table 10. Estimated Economic Contribution of 2022 Enduro Series

| | Direct Impact | Indirect & Induced Impacts | Total Economic Impact |
|---|---------------|----------------------------|-----------------------|
| Output (Sales) | \$76,257* | \$42,608 | \$118,865 |
| Employment | 1 | 0 | 1 |
| Labor Income | \$25,155 | \$13,231 | \$38,386 |
| State & Local Taxes | -- | -- | \$10,309 |
| *The direct impact is less than the estimated \$105,484 due to the application of retail margins. | | | |

WVICL NICA Series

Table 11. Average Per Rider Spending Estimates per Event, by Spending Category, 2022 NICA Races

| Category of Event-Related Expenditure | Canaan | Big Bear | Cacapon | North Bend | Twin Falls |
|---------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Overnight Lodging | \$103.72 | \$36.83 | \$132.41 | \$65.69 | \$78.11 |
| Groceries | \$67.45 | \$51.90 | \$48.71 | \$47.12 | \$42.52 |
| Dining | \$74.73 | \$32.01 | \$51.62 | \$31.00 | \$61.54 |
| Retail | \$21.90 | \$4.94 | \$7.84 | \$2.57 | \$3.22 |
| Gear | \$9.35 | \$1.52 | \$28.24 | \$0.86 | \$0.00 |
| Fuel | \$110.45 | \$61.57 | \$64.89 | \$54.19 | \$68.42 |
| TOTAL PER RIDER SPENDING | \$387.60 | \$188.77 | \$333.71 | \$201.43 | \$253.82 |
| *Does not include event admission | | | | | |

Total spending across all events totaled \$315,100. Spending ranged from \$98,839 in high amenity locations like Canaan Valley and Cacapon State Parks to the mid-to-low \$40,000 in lower amenity destinations like Big Bear.

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

| | Canaan | Big Bear | Cacapon | North Bend | Twin Falls | TOTAL SPENDING |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| Number of Riders | 255 | 226 | 217 | 229 | 217 | |
| Overnight Lodging | \$26,448 | \$8,323 | \$28,733 | \$15,043 | \$16,951 | \$95,498 |
| Groceries | \$17,201 | \$11,729 | \$10,569 | \$10,790 | \$9,227 | \$59,517 |
| Dining | \$19,057 | \$7,235 | \$11,202 | \$7,099 | \$13,353 | \$57,945 |
| Retail | \$5,585 | \$1,116 | \$1,701 | \$589 | \$700 | \$9,690 |
| Gear | \$2,384 | \$345 | \$6,129 | \$196 | \$0 | \$9,053 |
| Fuel | \$28,165 | \$13,915 | \$14,082 | \$12,410 | \$14,847 | \$83,418 |
| TOTAL SPENDING | \$98,839 | \$42,663 | \$72,415 | \$46,127 | \$55,078 | \$315,122 |

Spending by participating riders is estimated to generate \$203,072 in direct spending impacts in the state's economy (Table 13). This spending generates nearly \$113,600 in secondary impacts as these dollars are re-spent. In total, these expenditures contribute approximately \$316,600 in business volume, support three (3) local jobs, and generate nearly \$100,500 in wage and proprietor income. Tax impacts to the state and local economy are estimated at \$28,694

Table 13. Estimated Economic Contribution of 2022 NICA Races

| | Direct Impact | Indirect & Induced Impacts | Total Economic Impact |
|---|---------------|----------------------------|-----------------------|
| Output (Sales) | \$203,072* | \$113,558 | \$316,630 |
| Employment | 2 | 1 | 3 |
| Labor Income | \$65,345 | \$35,192 | \$100,538 |
| State & Local Taxes | -- | -- | \$28,694 |
| *The direct impact is less than the estimated \$315,122 due to the application of retail margins. | | | |

Total Contribution of 2022 Mountain Biking Events

Spending by participating riders in the events described above generated an estimated \$2.6 million in direct spending impacts in the state's economy (Table 14). In total, these expenditures contribute more than \$3.8 million in business volume, support thirty (30) local jobs, and generate nearly \$1 million in wage and proprietor income. Tax impacts to the state and local economy are estimated at nearly \$140,000.

Table 14. Estimated Economic Contribution of 2022 Mountain Bike Festivals and Events

| | Direct Impact | Indirect & Induced Impacts | Total Economic Impact |
|---|---------------|----------------------------|-----------------------|
| Output (Sales) | \$2.6 million | \$1.1 million | \$3.8 million |
| Employment | 23 | 7 | 30 |
| Labor Income | \$670,600 | \$362,400 | \$1.0 million |
| State & Local Taxes | -- | -- | \$139,400 |
| *The direct impact is less than the estimated \$315,122 due to the application of retail margins. | | | |

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/>

⁴ For a complete overview of the impact methodology for the World Cup event see: Christiadi, Deskins, Twilley, Arbogast, and Eades (2023)