Draft: for comments and discussion

Economic and Quality of Life Indicators for Monongahela National Forest Counties in West Virginia

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1. Executive Summary

Economy

Employment

Employment in the region has generally declined since 2000, with major setbacks during the 2008–2009 recession and the COVID-19 pandemic, followed by only partial recoveries. While the Leisure and Hospitality (L&H) sector showed stronger rebounds after both recessions, it still remains below its 2006 peak. Long-term trends reveal major declines in manufacturing and natural resource jobs, while education and health services have grown. Greenbrier County leads the region in L&H employment, though the sector was hit hard in 2020 with a 20% drop, and recovery has varied across counties.

Visitor Spending

Visitor spending in the region reached $801.1 million in 2023, rebounding strongly from the $498.7 million low in 2020. Greenbrier and Pocahontas counties led the way, with all eight counties showing growth in spending since the pandemic. Food and beverage, lodging, and recreation were the top spending categories, indicating a high volume of overnight visitors. Overall, tourism contributed $296 million in labor income and supported approximately 7,636 jobs, along with nearly $80 million in state and local tax revenue.

Tourism Assets

Tucker, Pendleton, and Greenbrier counties show strong cultural and recreational infrastructure, with above-average numbers of arts, entertainment, and recreation establishments per capita. Tucker County also leads in accommodation, food services, and full-service restaurants, far exceeding state, national, and tourism-dependent averages. Craft beverage businesses are present in most counties, with Tucker, Pendleton, and Pocahontas outperforming benchmarks, while counties like Grant and Webster consistently fall below average across multiple tourism-related sectors.

Quality of Life

Population and Education

Since 2000, all eight counties have experienced population decline, lagging behind state and national growth trends. Greenbrier remains the most populous, while Pendleton and Tucker have fewer than 7,000 residents each. The region also has a smaller share of residents aged 25–44 compared to national averages, with Randolph being the only exception. Educational attainment is mixed: while high school graduation rates are mostly on par with benchmarks, bachelor's degree attainment is generally low, with only Tucker County exceeding the state average.

Income and Employment

Income data highlights ongoing economic struggles in the region, with Tucker County standing out as the only county exceeding the state average in both per capita and median household income—though still below national benchmarks. The region is predominantly white with minimal racial or ethnic diversity. Employment rates vary, with Pocahontas and Webster counties showing the lowest rates, while Grant, Greenbrier, and Tucker counties outperform both state and national averages for recreation-dependent areas.

Housing and Infrastructure

The region has significant variation in housing characteristics, with Pocahontas and Tucker counties having a high share of seasonal homes, reflecting the influence of tourism. Median home values are below national averages, with Pocahontas having the highest at $169,200, while Webster and Nicholas offer more affordable housing. Housing stock is generally older than the national average, with limited new construction, and internet access is below national and tourism-dependent benchmarks, particularly in Pocahontas and Pendleton, highlighting ongoing digital infrastructure challenges.

Crime

The overall crime rate for the eight counties is mixed. Nicholas County emerges as a clear outlier, with the highest levels of both violent and property crime, well above all comparison benchmarks. Pocahontas and Randolph show moderate crime levels, while the remaining counties, especially Grant, Pendleton, and Tucker, demonstrate very low crime rates, reinforcing their image as safe, rural communities.

Environment

The environmental quality of these counties can be assessed through several key metrics. These include PM 2.5 levels from 2001 to 2020, showing generally improving air quality trends across all eight counties. The data, sourced from the CDC National Environmental Public Health Tracking Network, indicates that air quality in these counties has generally remained within acceptable ranges, likely benefiting from their rural location and extensive forest cover, as well as the general national trend of better air quality overall.

A comprehensive overview of parkland resources across the eight counties shows the number of parks, total park area, land area, and the share of park area in each county. This data highlights the significant natural recreational resources available in the region, supporting both quality of life for residents and tourism opportunities.

2. Introduction

Project Overview

Growing and maintaining a healthy recreation and tourism sector, that equitably benefits residents over the long term, requires active stakeholder engagement, a research-based robust understanding of potential challenges and opportunities, collaboration among various levels of government and landowners and a sound, research-based plan for a region's future. Research around the world has identified both rapid increases in rural tourism activity due to the COVID-19 pandemic and the challenges that rural destinations face. While the COVID-19 pandemic brought unprecedented opportunities to develop and promote tourism in rural gateway communities, rural Destination Management Organizations are faced with considerable challenges as they attempt to promote economic prosperity through tourism.

Gateway communities in the United States suffer from a lack of research-based performance indicators to measure and evaluate their strengths and weaknesses and to clearly identify where additional resources are needed to enhance the tourism and recreation economy. To this end, a multi-state, integrated project team that involves research and extension faculty from West Virginia University, Pennsylvania State University, the University of Vermont, and the University of New Hampshire was formed with support from the Northeast Regional Center for Rural Development to develop an integrated process for measuring and evaluating sustainable tourism performance indicators and competitiveness in rural destinations in the northeast United States.

By understanding the factors that make destinations resilient the project will produce policy recommendations and general guidelines for improving destination and gateway community sustainability and well-being. This project was funded through a USDA Agriculture and Food Research Initiative grant and adopts a mixed method approach that involves primary and secondary data collection for three targeted rural case study destinations in northwestern Pennsylvania, the Upper Valley region on the Vermont/New Hampshire border, and the Monongahela National Forest region of West Virginia.

The long-term goal of this project is to fully leverage the resources of the Land-Grant Universities to enhance the sustainability and resiliency of rural destinations by providing research-based information and a destination management framework for rural gateway destinations seeking to address post-COVID 19 opportunities and challenges. Project team members will work closely with destination leadership in targeted case study regions to accomplish the research activities which include:

- Visitor Preferences and Resident Attitudes Toward Tourism surveys.
- **Economic, Quality of Life, and Tourism Report**
- Inventory and Spatial Analysis of Recreation and Tourism Infrastructure and Assets
- Mobile phone data analysis to better understand visitors/tourist patterns
- First Impressions of Tourism Assessment.

This report focuses on findings from economic, quality of life, and sustainable tourism indicators identified from secondary data sources in the Monongahela National Forest (MNF) region, West Virginia.

Sustainable Tourism Indicators from Secondary Data

Primary data provides a firsthand understanding of the opportunities and challenges impacting visitors, local businesses, and other destination stakeholders. However, collecting this data requires a significant allocation of resources, especially time. Secondary data provide a more cost-effective method for analyzing a breadth of data on the people, organizations, and place that may otherwise be difficult to collect. Government agencies often offer free data for geographies across the nation and spanning multiple years allowing local stakeholders to quickly and easily monitor change in the destination over time and compare characteristics and trends in their destination relative to other peer and aspirational places. The project team worked with local stakeholders to develop county level indicators that can be used to quantify and describe tourism demand and destinations' economic, social, and environmental characteristics, and monitor destination change especially considering recent events like the COVID-19 pandemic. To allow for comparisons across places we provide both county level estimates and data for the United States, the state of Pennsylvania, and USDA Economic Research Service recreation dependent counties, those characterized by a high percentage of employment, earnings, and seasonal housing units in the recreation, entertainment, and hospitality sectors.

Delphi process

Given the breadth of data available we worked with destination stakeholders in a participatory process to develop an indicator set rooted in the sustainable tourism literature and reflective of the data that stakeholders felt would be most relevant to measuring change in and across rural tourism destinations. Participatory approaches enable researchers to collaborate directly with stakeholders, offering a grounded understanding of problems and identifying practical solutions (McNiff & Whitehead, 2011). The Delphi method employed in this study provided a structured process to gather stakeholder opinions, summarize collective responses, and iteratively refine perspectives based on group feedback (Shang, 2023). Originally developed by the RAND Corporation in the 1950s for military planning, the Delphi method has since been applied across various fields where researcher-practitioner collaboration is essential (Kezar & Maxey, 2016; Keeney et al., 2001). It is particularly valuable for studying issues with incomplete knowledge, uncertain landscapes, or limited consensus (Kezar & Maxey, 2016), and has been identified as an effective method for selecting indicators when input is needed from diverse viewpoints (Freitas et al., 2018).

Table 1 shows the county level indicators suggested by the literature and prioritized by the Delphi process.

Table 1. Selected Indicators from Literature Review and Delphi Process

Economic	Social	Environmental
Total Employment	Population Trends	Air Quality (PM 2.5)
Employment by Industry Sector	Population Aged 25-44	Parks and Park Area
Leisure and Hospitality Employment (including arts, entertainment and recreation; accommodation and food services; select component sectors)	Educational Attainment	Water Pollution
Leisure and Hospitality Establishments	Race and Ethnicity	
Leisure and Hospitality Resilience	Income	
Visitor Spending and Spending by Category	Share of Employment	
Economic Impacts of Visitor Spending	Housing Characteristics (seasonal homes, median house value, median home age, affordability)	
Tourism Assets (including recreation features, lodging, restaurants, shopping, cultural heritage, etc.)	Violent and Property Crime	

Source: compiled by authors

Travel and Tourism in the United States

According to the U.S. Travel Association's U.S. Travel Winter 2025 Forecast (Figure 1) (driven by Tourism Economics' travel forecasting model), travel expenditure in the U.S. will continue to grow, driven by resilient consumer spending, sustained business investment and major events promoting international visits. For 2025, total U.S. Travel spending is projected to grow 3.9% to $1.35 trillion, equaling 2019 levels (inflation-adjusted), with additional growth to $1.46 trillion (inflation-adjusted) by 2028.

U.S. Travel forecasts 8.8% growth for inbound international visits in 2025 and 8.9% growth in 2026. Growth in international visits to the United States remains an important factor in re-establishing travel as one of our most important exports, with more than $200 billion in international spending projected for 2025. Challenges include reduced visits from important regions including Asia, the risk of geopolitical tensions, policies that complicate and dissuade

potential U.S. visitation and prolonged visa wait times for visitors from significant inbound markets.

Figure 1. U.S. Travel Forecast

	ACTUAL					FORECAST				
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Total # of trips	**2.40 B**	**1.60 B**	**2.04 B**	**2.30 B**	**2.37 B**	**2.43 B**	**2.50 B**	**2.56 B**	**2.62 B**	**2.68 B**
Domestic person-trips	**2.32 B**	**1.58 B**	**2.02 B**	**2.25 B**	**2.31 B**	**2.36 B**	**2.42 B**	**2.47 B**	**2.53 B**	**2.58 B**
Leisure	1.85 B	1.40 B	1.77 B	1.88 B	1.89 B	1.92 B	1.96 B	2.01 B	2.05 B	2.09 B
Business	463.9 M	181.3 M	249.5 M	370.9 M	413.1 M	436.0 M	454.5 M	467.4 M	478.7 M	488.3 M
Auto	2.13 B	1.50 B	1.88 B	2.08 B	2.12 B	2.16 B	2.21 B	2.26 B	2.31 B	2.36 B
Air	188.9 M	78.6 M	140.4 M	174.6 M	190.7 M	200.2 M	205.8 M	210.6 M	215.1 M	219.2 M
International arrivals	**79.4 M**	**19.2 M**	**22.1 M**	**50.8 M**	**66.5 M**	**72.4 M**	**78.8 M**	**85.8 M**	**91.2 M**	**95.0 M**
Canada	20.7 M	4.8 M	2.5 M	14.4 M	20.5 M	20.4 M	21.5 M	22.8 M	24.0 M	24.8 M
Mexico	18.3 M	6.8 M	10.4 M	12.4 M	14.5 M	17.1 M	18.6 M	20.3 M	21.2 M	21.7 M
Overseas	40.4 M	7.6 M	9.2 M	24.0 M	31.5 M	35.0 M	38.6 M	42.8 M	46.0 M	48.5 M

Note: Source is from U.S. Travel Association Travel Forecast Winter 2025

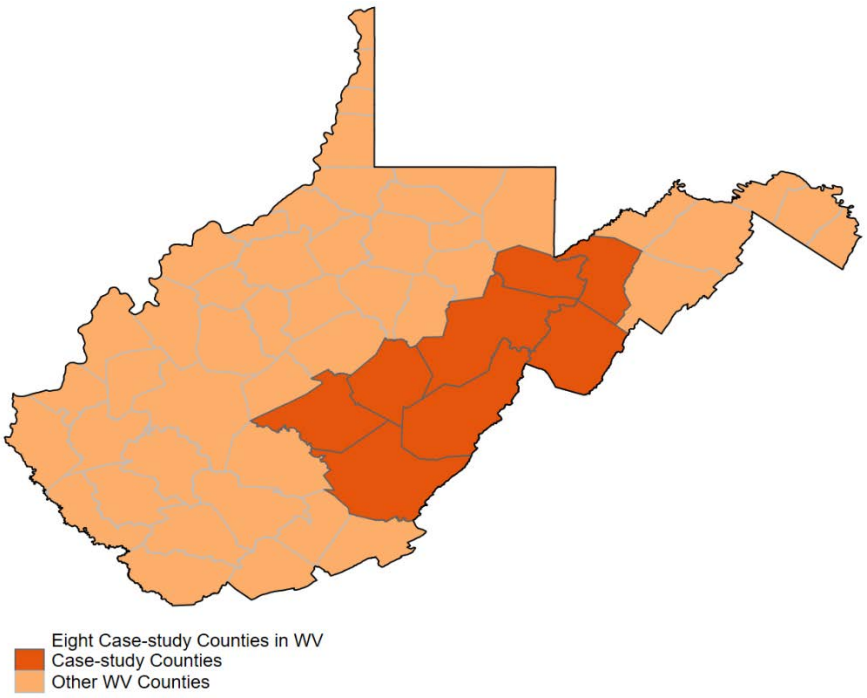
Travel and Tourism in West Virginia

According to the Economic Impact of Tourism in West Virginia (2023) report published by Tourism Economics, The travel sector is an integral part of the West Virginia economy. Visitors generate significant economic benefits to households, businesses, and government and will be a critical driver of the state's future. In 2023, more visitors came to West Virginia than ever before, direct spending reached all-time highs, and tourism-supported jobs accounted for nearly 7% of all jobs in the state and a total of $2.1 billion of income. Visitor volume to West Virginia rose 3.2% from 2022 and reached 75 million visitors. These visitors spent $6.3 billion in the state, 5.6% more than in 2022. These levels are the highest ever for both visitation and spending.

3. Geographic Context

The eight counties form a contiguous block in eastern West Virginia (Figure 2). The counties cover more than 5,700 square miles and represent a significant portion of the state's rural landscape (Table 2). Population density ranges from 38 persons per square mile in Nicholas County to less than 9 persons per square mile in Pendleton and Pocahontas Counties. As shown in Figure 2, these counties are strategically positioned along the backbone of the Allegheny Mountains, sharing borders with each other and creating a unified regional tourism economy. This area is known for its natural attractions, including the Monongahela National Forest, state parks, and outdoor recreation opportunities, which contribute significantly to their tourism-based economy. Nearly a third (30.5%) of the region is actively managed for biodiversity protection and natural resource extraction. In Tucker (49%) and Pocahontas (58%) Counties half or more of the counties' land area is in protected lands.

Figure 2. Locations of eight WV counties in the Monongahela National Forest region included in study



Note: Authors' mapping from US Census Bureau Tiger shape files.

Table 2. Land Area, Population Density, and Protected Lands

	Size (Miles^2)	Pop. Density per Miles^2 2020	Protected Land (Miles^2)	% of Total Area Protected as GAP 1-3*
Tucker	419	16	205	49%
Grant	477	23	61	13%
Pendleton	696	9	259	37%
Randolph	1040	27	343	33%
Pocahontas	940	8	545	58%
Webster	553	15	116	21%
Nicholas	647	38	59	9%
Greenbrier	1020	32	184	18%
West Virginia	24041	75	2808	12%
U.S.	3533038	94	1159265	33%
*GAP 1-2 are actively managed for biodiversity; GAP 3 are managed for multiple uses including both conservation and extraction				

Note: Source is from U.S. Census QuickFacts and U.S. Geological Survey (USGS) Gap Analysis Project (GAP), 2024, Protected Areas Database of the United States (PAD-US) 4.0.

4. Employment and Industry Analysis

Overall Employment Trends

The region's employment trends can be examined using complementary data from Quarterly Census of Employment and Wages (QCEW). As shown in Figure 3, total employment has declined since 2000, with significant impacts from the 2008-2009 recession, limited post-recession recovery, and sharp declines during the COVID-19 pandemic followed by partial recovery. While Leisure and Hospitality employment showed a stronger recovery in both recession periods, employment remains below pre-recession levels and below the industry's peak in 2006.

Figure 3. Non-farm and Leisure and Hospitality (L&H) Employment in the Eight Counties

Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics.

Industry Composition

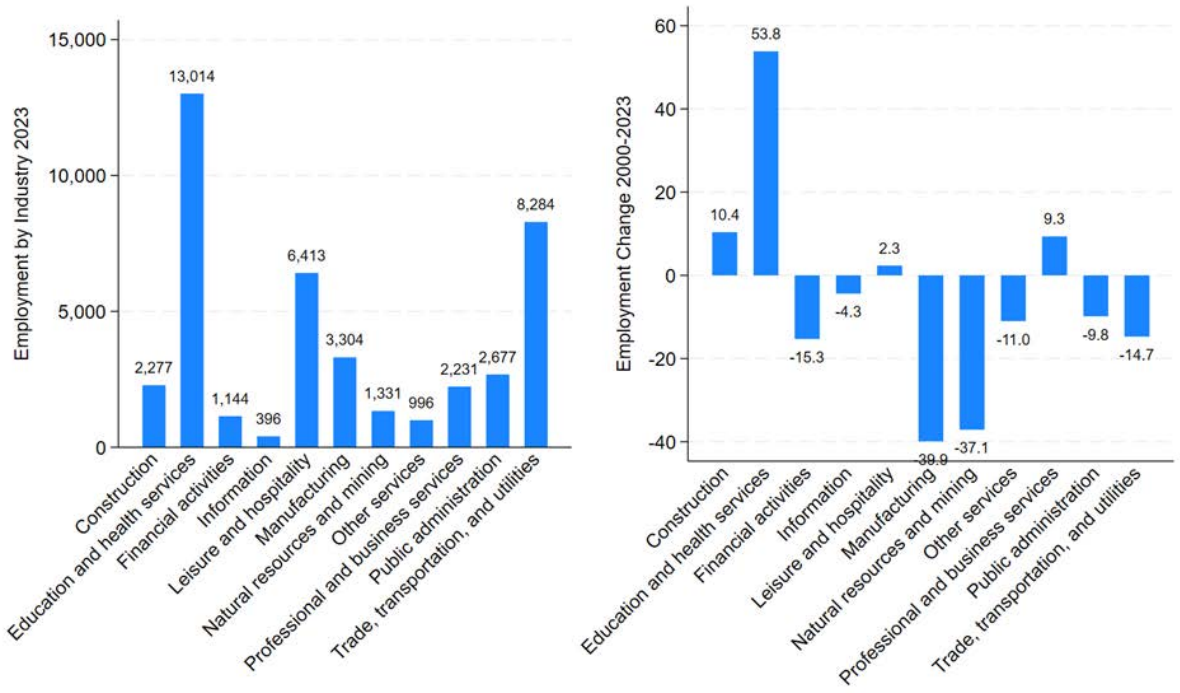
Analysis of current employment distribution is presented in Table 3 and Figure 4. The industry patterns are comparable to most rural areas showing a reliance on education and health services and the retail sector. Long-term employment changes from 2000 to 2023 (Figure 4) show varying trajectories for different sectors. Manufacturing and natural resource extraction experienced the largest declines over this period, while education and health services showed the most growth. Leisure and hospitality employment has remained largely unchanged at just 2.3% above its level in 2000.

Table 3. Employment by Sector for Eight WV Counties 2023

	Grant	Greenbrier	Nicholas	Pendleton	Pocahontas	Randolph	Tucker	Webster
Natural resources and mining	88	273	432	80	48	338	0	72
Construction	341	808	314	66	112	529	33	74
Manufacturing	197	652	741	72	216	967	303	156
Trade, transportation, and utilities	819	2137	1851	298	438	2158	275	308
Information	20	136	65	23	37	103	6	6
Financial activities	116	320	153	59	53	353	90	0
Professional and business services	133	978	349	46	200	471	19	35
Education and health services	1275	3861	1894	490	606	3646	596	646
Leisure and hospitality	304	2849	788	151	887	817	554	63
Other services	78	214	141	44	113	272	109	25
Public administration	196	445	296	102	329	866	347	96

Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics.

Figure 4. 2023 Employment by Industry (left) and Industry Employment Change 2000-2023 (right)



Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics. The top panel shows number of employment and the bottom panel shows percentage changes from 2000-2023.

5. Tourism Economy

Travel and Tourism in the Monongahela National Forest Region of West Virginia

Tourism and leisure activities play vital roles in the economic landscape of West Virginia's rural counties, particularly in the higher elevation regions of the state. The eight counties of Tucker, Grant, Pendleton, Randolph, Pocahontas, Nicholas, Webster, and Greenbrier represent a significant rural tourism cluster that has experienced various economic challenges and transformations over the past two decades. This report examines the employment trends in these counties' Leisure and Hospitality (L&H) sector from 2000 to 2023, providing insights into the sector's resilience and vulnerabilities during major economic or other shocks.

Tourism Spending and Economic Impacts

Visitor spending across the eight counties totaled $801.1 million in 2023, showing strong recovery from the pandemic-induced low of $498.7 million in 2020 (Table 4). Greenbrier and Pocahontas counties consistently lead in visitor spending, each generating $399.6 and 148.9 million respectively in 2023 while Webster and Pendleton generated 9.7 and 16.2 million respectively. All counties demonstrated post-pandemic growth in visitor spending ranging from 11% in Randolph to 69% in Pendleton.

Table 4. Visitor Spending for Eight WV Counties 2019-2023 ($millions*)*

County	2019	2020	2021	2022	2023	% change
Webster	7.7	6.3	8.7	9.7	9.7	25.97%
Pendleton	9.6	9.5	13.3	14.6	16.2	68.75%
Grant	14.2	17.2	19.9	19.8	21.2	49.30%
Nicholas	31.4	26.4	34.0	39.4	41.4	31.85%
Randolph	70.9	56.0	70.9	78.2	78.8	11.14%
Tucker	61.3	68.9	81.6	80.0	85.3	39.15%
Pocahontas	94.4	88.0	122.0	147.9	148.9	57.73%
Greenbrier	285.5	226.4	355.1	373.0	399.6	39.96%
Total	$575.00	$498.70	$705.50	$762.60	$801.10	39.32%

Note: Source is from Economic Impact of Tourism in West Virginia – 2023 by Tourism Economics.

Analysis of spending categories in 2023 (Table 5) reveals food and beverage as the largest spending category at $224.3 million, followed by lodging at $195.3 million and recreation at $149.3 million demonstrating that a significant amount of visitors are traveling to the region for overnight visits.

Table 5. Visitor Spending by Category for Eight WV Counties 2023 ($millions, nominal)

	Lodging	Food & beverages	Recreation	Retail	Transportation	Total
Webster	$1.75	$3.14	$0.37	$1.27	$3.16	$9.69
Pendleton	$2.83	$3.63	$3.89	$2.71	$3.09	$16.15
Grant	$3.05	$4.96	$2.71	$4.91	$5.54	$21.18

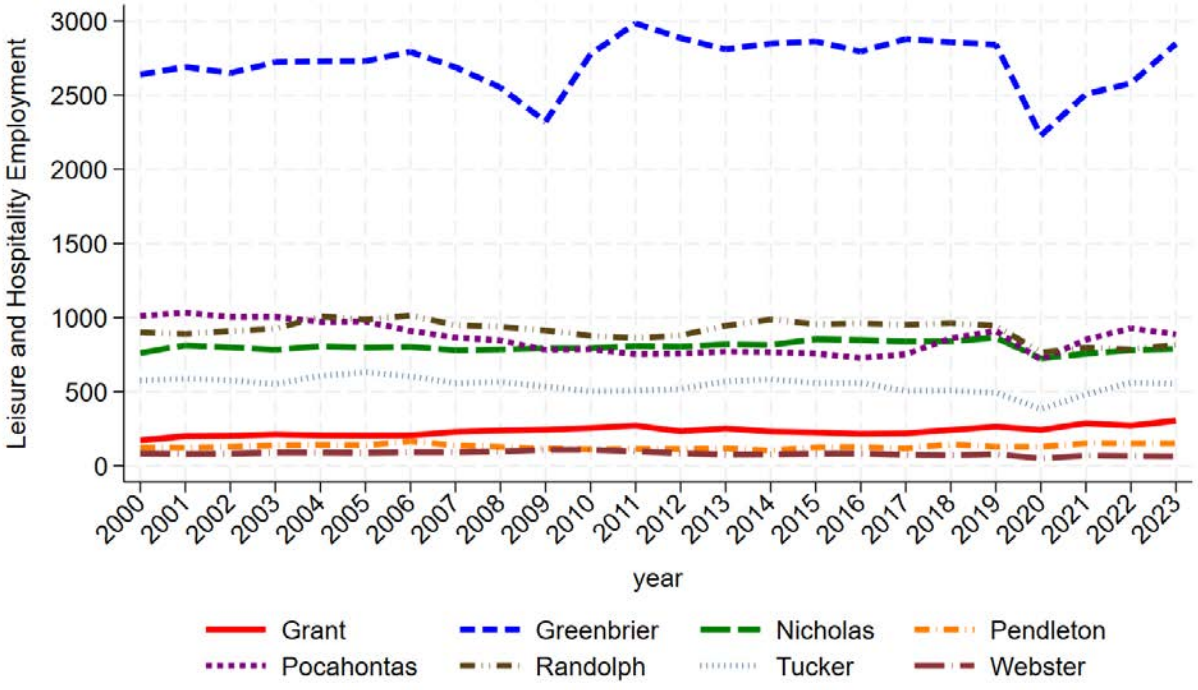
Nicholas	$4.53	$11.69	$6.73	$7.93	$10.49	$41.38
Randolph	$13.43	$19.03	$13.63	$16.84	$15.90	$78.83
Tucker	$27.09	$26.34	$8.07	$16.29	$7.47	$85.25
Pocahontas	$38.15	$45.30	$27.63	$23.51	$14.32	$148.91
Greenbrier	$104.49	$110.24	$86.22	$58.90	$39.75	$399.60
Total	$195.32	$224.33	$149.25	$132.36	$99.72	$800.99

Note: Source is from Economic Impact of Tourism in West Virginia – 2023 by Tourism Economics

Leisure and Hospitality Employment Trends

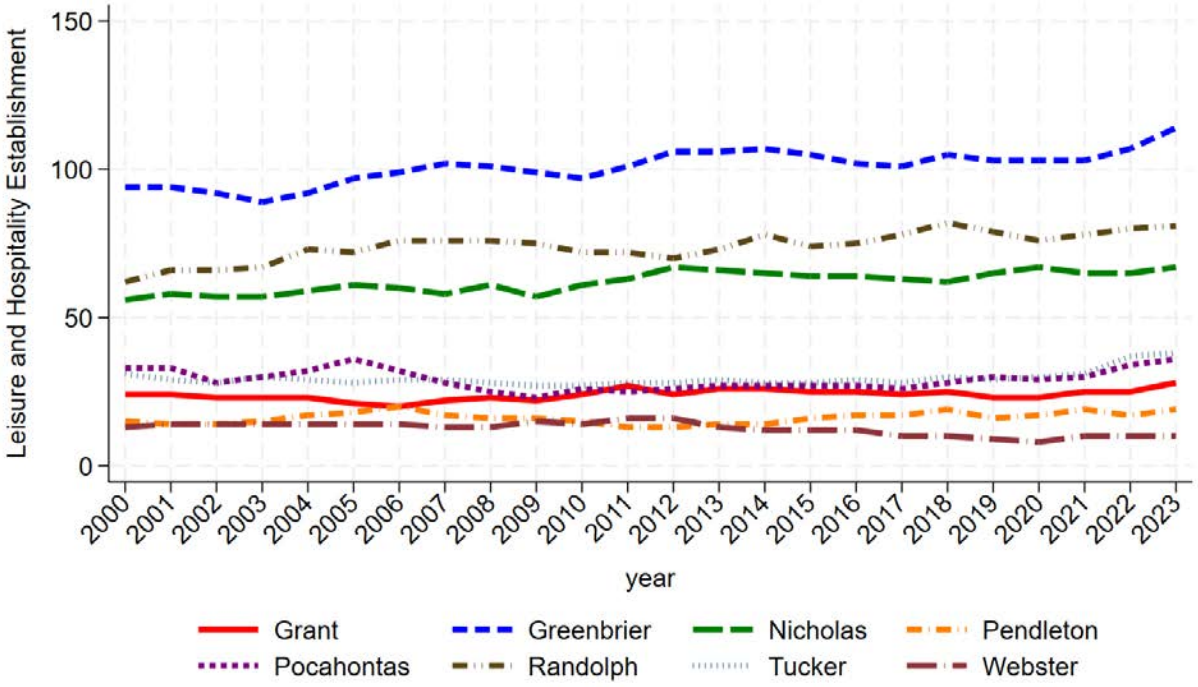
Figures 5 and 6 present L&H employment and establishment changes from 2000 to 2023. As shown in Figure 5, the regions L&H employment is dominated by Greenbrier County which employed 2,849 workers in 2023, more than 3 times the number as the second leading Pocahontas County (887). Employment changes in Greenbrier County show the impacts of both the 2008 financial crisis and COVID-19 pandemic. Prior to 2019/2020 L&H employment in most counties remained relatively stable. The COVID-19 pandemic in 2020 had a particularly severe impact on the L&H sector, causing employment to drop by 20% (Figure 7), the most dramatic decline in the observed period; however, most counties have shown recovery. While Nicholas and Randolph Counties were slower to recover post pandemic, Tucker and Pocahontas showed strong recovery, although Pocahontas seems to have declined slightly in past year (2022-2023)

Figure 5. Leisure and Hospitality Employment for Eight WV Counties 2000-2023



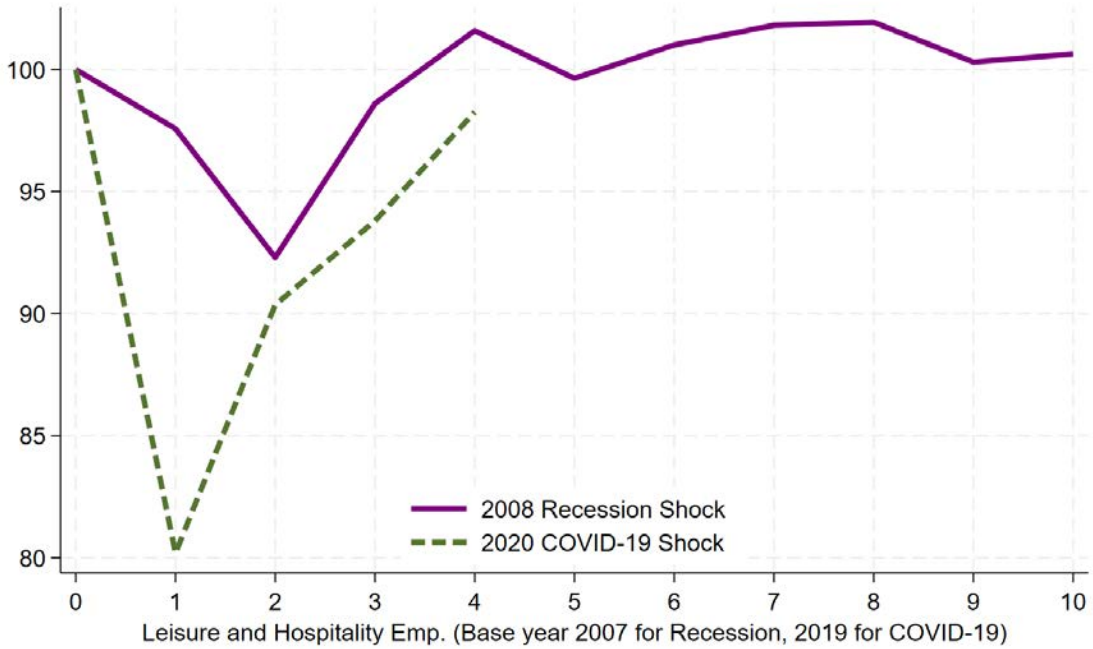
Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics.

Figure 6. Leisure and Hospitality Establishment numbers for Eight WV Counties 2000-2023



Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics.

Figure 7. Leisure and Hospitality Resilience for Recession and COVID-19 Shock 2000-2023



Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics.

Direct economic impacts (Table 6) include $208 million in labor income and nearly $80 million in combined state and local taxes for 2023 including nearly $7 million from hotel/motel tax collections alone (Table 7). When considering total impacts including multiplier effects, the tourism industry generated $296 million in labor income and supports an estimated 7,636 jobs for workers and business owners.

Table 6. Tourism Industry Direct Impacts for Eight WV Counties 2023 ($millions)

				Amounts in Thousands			
County	Direct Employment	Total Employment	Share of Region	Direct Labor Income	Total Labor Income	State & Local Taxes	Per HHLD
Grant	161	206	3.5%	$3,604	$5,652	$1,908	$459
Greenbrier	2,908	3,562	18.8%	$123,033	$171,113	$41,727	$2,834
Nicholas	280	372	3.8%	$8,608	$13,452	$3,682	$382
Pendleton	205	245	9.1%	$2,626	$3,881	$1,496	$633
Pocahontas	1,142	1,335	29.1%	$33,879	$48,357	$13,522	$4,582
Randolph	680	889	6.1%	$14,988	$23,638	$7,416	$716
Tucker	752	910	21.9%	$19,612	$27,132	$9,284	$3,274
Webster	90	117	5.7%	$1,766	$2,815	$841	$279
Total	6,218	7,636		$208,116	$296,040	$79,876	$6,218

Note: Source is from Economic Impact of Tourism in West Virginia – 2023 by Tourism Economics

Table 7. Hotel Motel tax collections Monongahela National Forest counties.

County	2018	2019	2020	2021	2022	2023
Pendleton	$56,528	$61,938	$58,170	$90,518	$116,152	$132,580
Grant	$82,261	$107,997	$118,409	$134,769	$125,156	$137,655
Randolph			$308,682	$318,548	$483,934	$529,778
Tucker	$793,066	$727,886	$708,774	$1,266,374	$1,355,594	$1,355,836
Pocahontas		$1,692,019	$2,236,906	$2,640,769	$2,566,681	$2,227,956
Greenbrier		$1,848,000	$1,324,000	$1,622,000	$2,460,000	$2,400,000
Total	$931,855	$4,437,840	$4,754,941	$6,072,978	$7,107,517	$6,783,805

All counties collect a 6% hotel-motel tax on all overnight stays (except campgrounds) that are less than 30 days except Greenbrier county which collects a 3% hotel motel tax

Tourism Assets

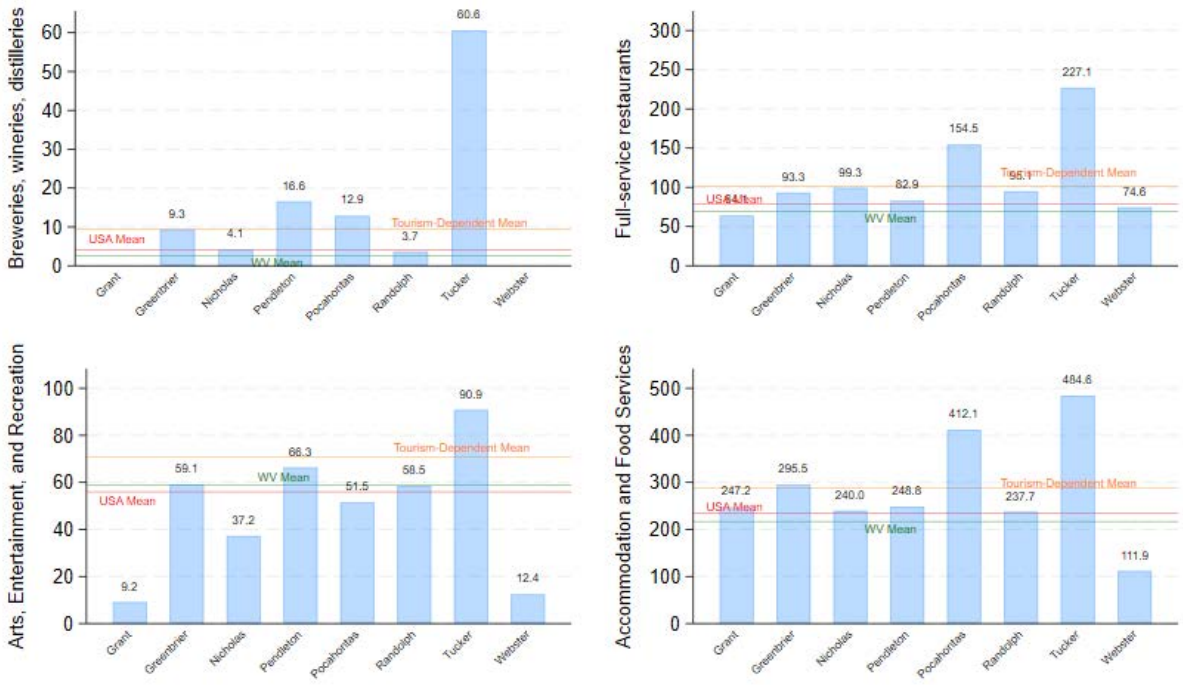
The graphs below compare the number of establishments in four key tourism-related sectors across several counties, measured against national (USA), state (West Virginia), and tourism-dependent county averages. Data show that Tucker (90.9), Pendleton (66.3), and Greenbrier (59.1) exceed the tourism-dependent mean for arts, entertainment, and recreation establishments per 100,000 persons, suggesting strong cultural and recreational infrastructure. Other counties, like Grant (9.2) and Webster (12.4), show limited activity and fall below all comparative benchmarks. For the accommodation and food service sector specifically, Tucker County again leads with region with 484.6 establishments per 100,000 population, nearly double the tourism-dependent mean and well above both the state and national averages. Pocahontas (412.1) and Greenbrier (295.5) also demonstrate a significant concentration of establishments, while Webster trails behind with 111.9, falling below all reference points.

The availability of restaurants and other food-away-from-home (FAFH) outlets varies across rural counties, and those that depend on natural amenities, tourism, and recreation generally have more options for dining out. Prior to the COVID pandemic, the rural counties whose economies depended on recreation had more FAFH establishments per capita than rural counties with other leading industries.[1] Tucker again leads with 227.1 full-service restaurants per 100,000 persons, significantly outperforming the national, state, and tourism-dependent means. Randolph (154.5) and Nicholas (99.3) also show robust counts, suggesting a healthy local dining scene. Meanwhile, Grant and Webster remain below average, indicating fewer restaurant options relative to comparison areas.

Craft beverages can play a significant role in tourism, attracting visitors seeking unique, local experiences. Local breweries, wineries, and distilleries are located in six of the eight regional counties. Tucker County again stands out with 60.6 establishments per 100,00 0 persons, far exceeding all comparison benchmarks. Pendleton (16.6) and Pocahontas (12.9) also surpass both the state and tourism-dependent county averages, indicating a strong presence of craft beverage businesses. In contrast, counties such as Nicholas and Webster fall well below all averages, with limited activity in this sector.

[1] Source from https://www.ers.usda.gov/amber-waves/2023/august/among-rural-u-s-counties-those-with-recreation-dependent-economies-had-most-options-per-capita-for-dining-out-in-2019

Figure 8. Full-service restaurants; Breweries, wineries, distilleries; Arts, Entertainment, and Recreation; Accommodation and Food Services per 100K population 2023.



Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics.

Tourism and Recreation Features Inventory and Dashboard

In order to aid in better understanding the quantity and spatial distribution of recreation features and tourism amenities, a tourism and recreation features inventory and dashboard was developed by West Virginia University faculty and students from a variety of datasets (see Appendix A for detailed list of data sources). These assets vary widely across the region. Short-term rentals have seen explosive growth following the pandemic.

Dashboard link: https://wvu.maps.arcgis.com/apps/dashboards/e1c763ec58984eb48ef105afc962b3c4

Table 7. Recreation Features Inventory

Feature	Grant	Greenbrier	Nicholas	Pendleton	Pocahontas	Randolph	Tucker	Webster	Total
Mountain Biking Trails	3	35	15	25	377	77	106	9	**647**
Hiking Areas	8	73	25	41	200	93	163	33	**636**
Hunting Areas	26	45	15	34	50	41	36	12	**259**
Whitewater Streams	13	16	15	16	19	25	12	20	**136**
Fishing Streams/Ponds	6	13	7	9	18	16	8	13	**90**
Rock Climbing Areas	0	0	5	22	0	1	2	0	**30**
Boat Launch Locations	0	2	0	0	1	1	0	0	**4**
XC Skiing Areas	0	0	0	0	1	0	2	0	**3**
Snowmobile Trails	0	0	0	0	1	0	0	0	**1**

Table 8. Tourism Amenities Inventory

Feature	Grant	Greenbrier	Nicholas	Pendleton	Pocahontas	Randolph	Tucker	Webster	Total
Accommodations (hotels and motels)	8	13	8	4	24	13	11	1	**82**
Accommodations (RV parks and campgrounds	3	7	7	7	13	14	10	5	**66**
Accommodations (short term rentals)	133	334	243	178	2,836	354	1,364	53	**5495**
Restaurants/Food (chain)	9	48	40	2	12	26	5	7	**149**
Restaurants/Food (non-chain)	12	67	27	12	37	35	26	9	**225**
Shopping Facilities	0	5	3	0	4	7	3	0	**22**
Cultural Heritage Attractions	1	3	1	0	2	4	4	1	**16**
Sports (Golf Courses)	0	4	0	0	1	0	1	0	**6**
Entertainment Facilities	1	6	3	0	0	3	1	0	**14**
Transportation Providers	1	4	2	0	0	2	0	0	**9**

Table 9. Short-Term rental listings 2019-2024 (AirBnB, VRBO)

Note: Source is from KeyData

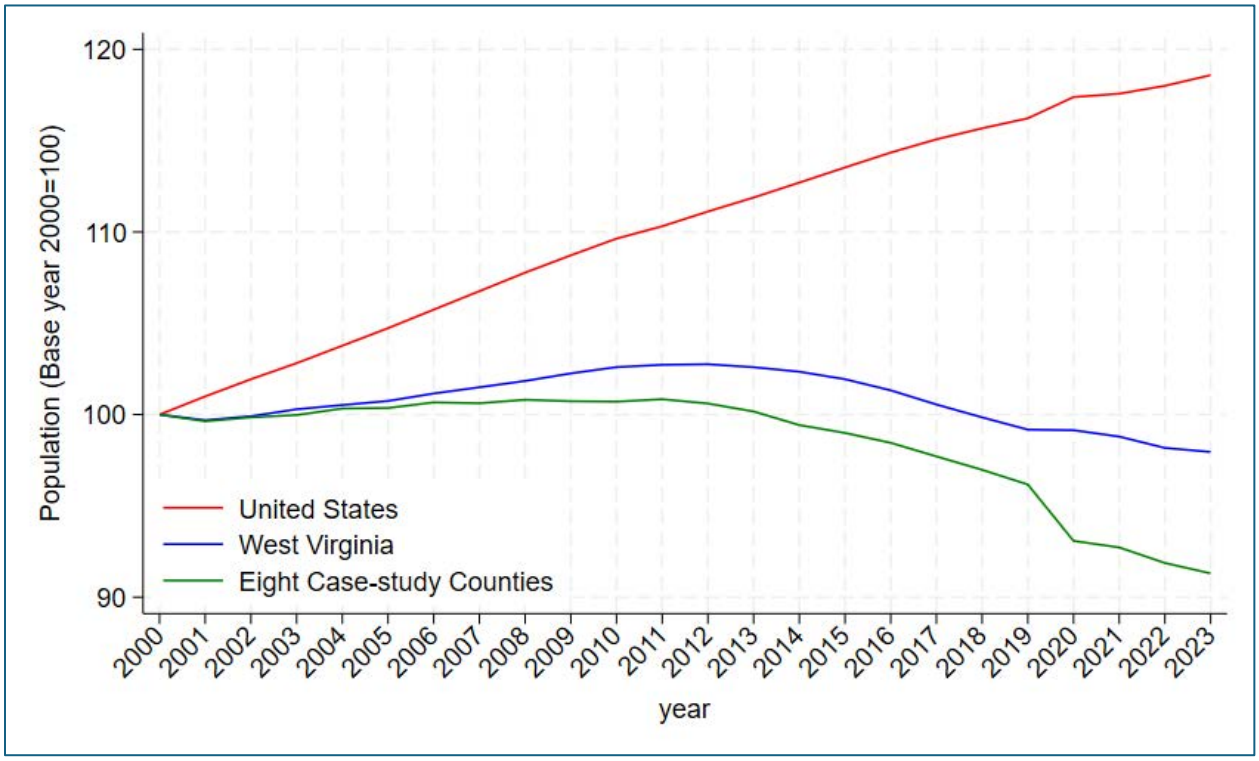
County	2019	2020	2021	2022	2023	2024	% change 2019-2024	growth 2019-2024
Grant	56	89	90	107	128	148	**164%**	2.64
Greenbrier	175	254	284	329	366	382	**118%**	2.18
Nicholas	89	133	156	194	256	275	**209%**	3.09
Pendleton	72	102	110	150	185	194	**169%**	2.69
Pocahontas	1216	1923	2124	2506	2876	3236	**166%**	2.66
Randolph	156	235	261	323	378	393	**152%**	2.52
Tucker	820	1309	1315	1457	1577	1653	**102%**	2.02
Webster	22	25	26	30	46	53	**141%**	2.41
Total	2606	4070	4366	5096	5812	6334	**143%**	2.43

6. Quality of Life Indicators

Population and Demographics

Population trends across the eight counties show consistent decline since 2000 (Figure 9). All counties have experienced negative growth rates that significantly lag behind both state and national averages. As shown in Figure 10, Greenbrier County has the largest population among the eight counties at approximately 33,000 residents, followed by Randolph and Nicholas counties with populations near 27,000. Pendleton and Tucker counties have notably smaller populations, with under 7,000 residents each.

Figure 9. Population Trend for Eight WV Counties and Comparison Geographies



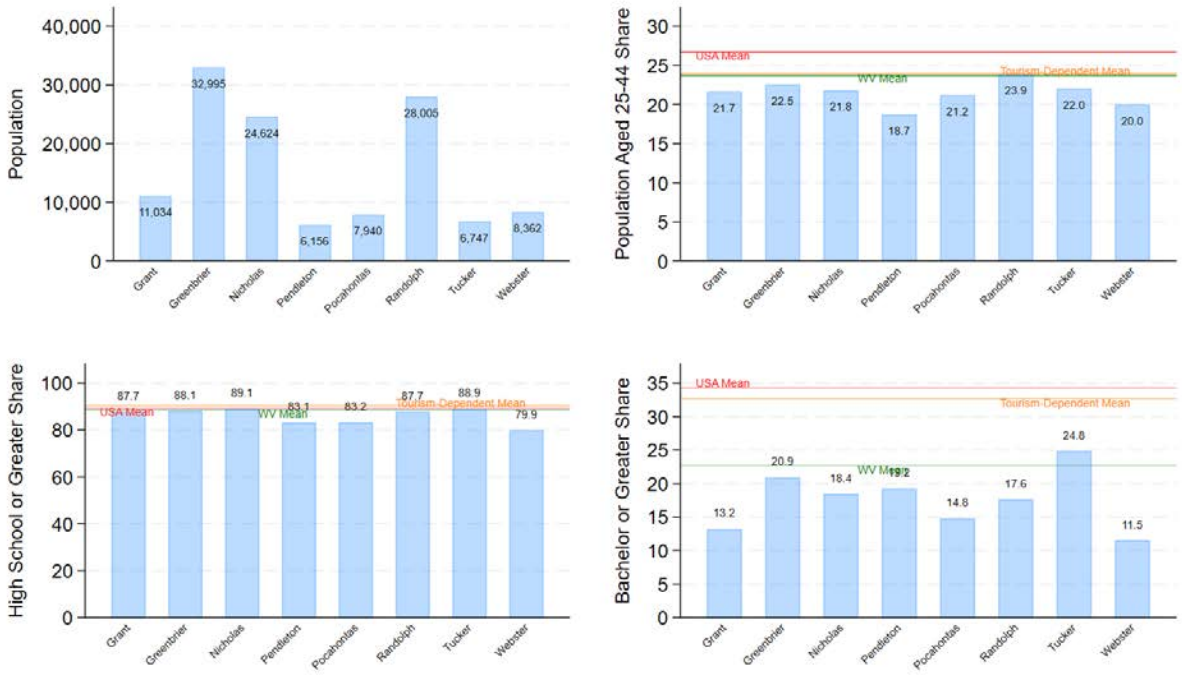
Note: Source is from the US Census Bureau.

In Figure 10, the age composition of these counties reveals different demographic patterns, when compared to the nation. Figure 10 shows various demographic indicators including the percentage of the population aged 25-44, a crucial working-age demographic. The comparable number nationally is 26.7%. With the exception of Randolph County which is comparable to the state and tourism dependent average, all of the component counties fall below the benchmark averages.

Education and Workforce

Educational attainment patterns reveal mixed results across the region (Figure 10). High school completion rates range from 80% in Webster County to 89% in Nicholas County, with five of the eight counties across the counties showing rates comparable to the benchmark regions. However, bachelor's degree attainment presents a different picture. Tucker County leads the region in higher education attainment at approximately 25%, while Webster County shows the lowest rate at about 12%. Only Tucker County was above the state average for higher education completion and all counties fell below the averages observed for the national and recreation dependent county averages.

Figure 10. Population and Educational Attainment in Eight WV Counties, 2018-2022



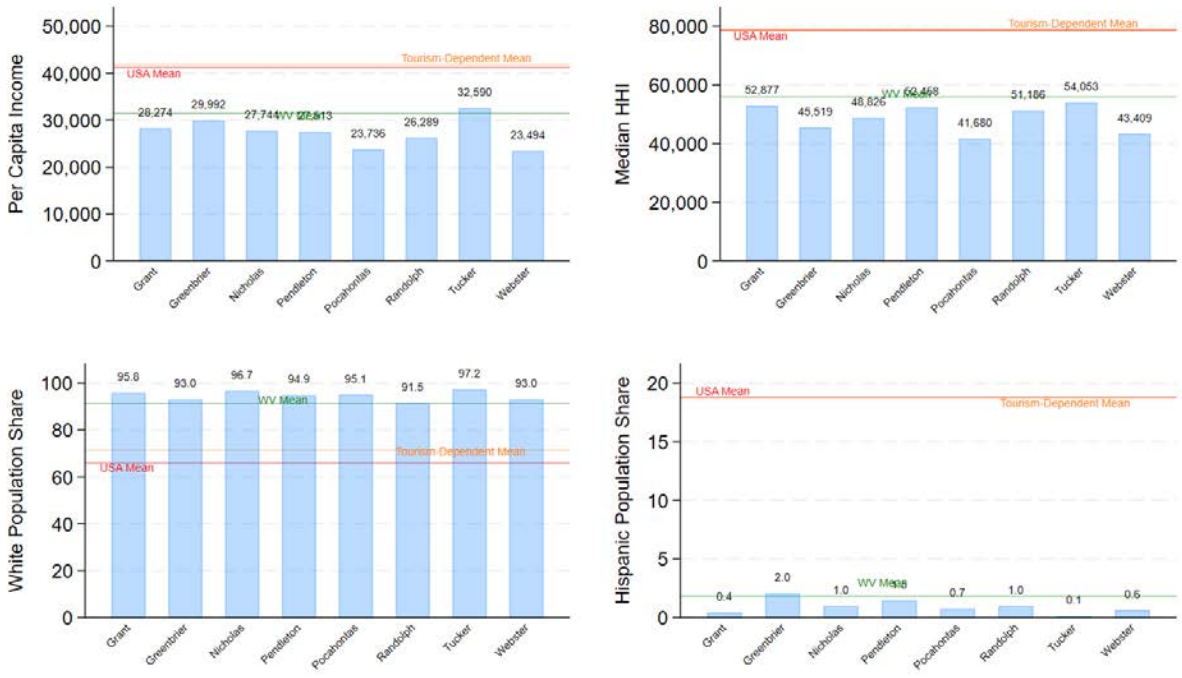
Note: Source is from 2018-2022 5-year American Community Survey. The population includes both persons in housing units and persons in group quarters. The bar for WV shows the average of the state over all the counties. The bar for USA shows the average of the nation over all the counties. The bar for Tourism shows the average of the tourism-dependent counties. Tourism dependent counties are defined based on USDA-ERS definitions for recreaation counties based on 1) tourism related jobs 2) tourism earnings 3) the share of vacant secondary homes.

Income

Income metrics reveal persistent economic challenges (Figure 11). Tucker County leads in both per capita income and median household income, with median household income over $54,000 and per capita income over $32,000. While per capita income in the county was greater than the state average, values for all other counties were less than the benchmark comparison areas; no counties reported median household incomes above the benchmark levels.

Figure 11 also shows the population composition of the eight WV counties. Like most of the state the population is largely white and shows little racial or ethnic diversity.

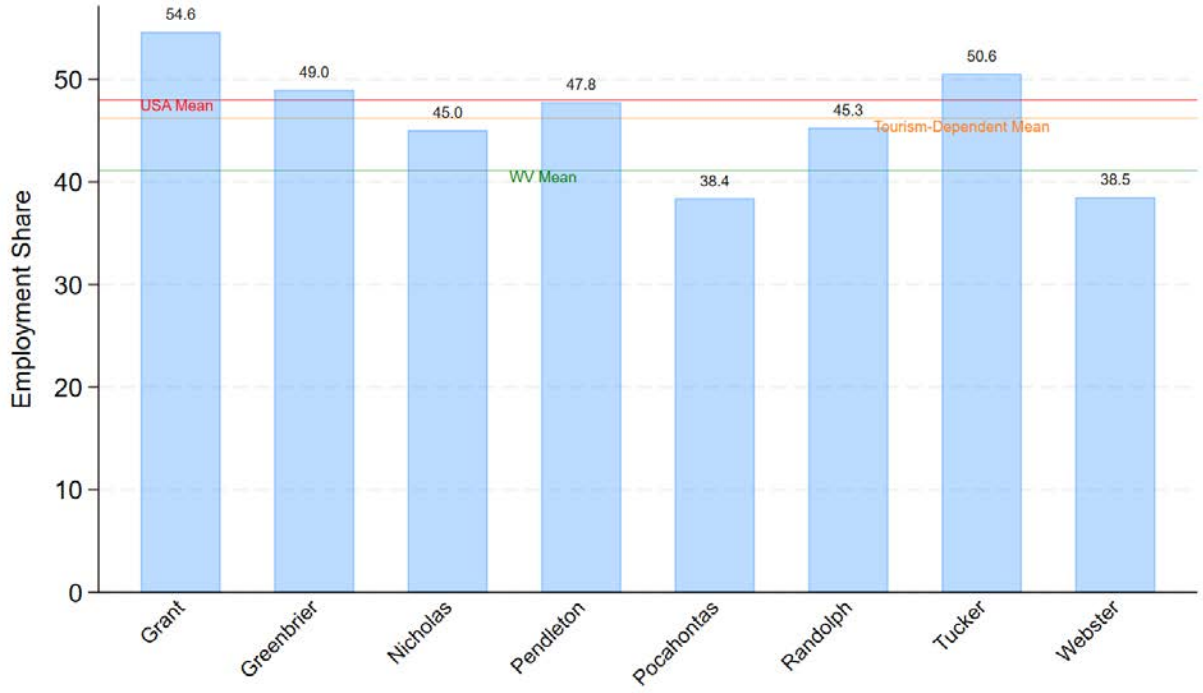
Figure 11. Income and Population Composition in Eight WV Counties, 2018-2022



Note: Source is from 2018-2022 5-year American Community Survey. The bar for WV shows the average of the state over all the counties. The bar for USA shows the average of the nation over all the counties. The bar for Tourism shows the average of the tourism-dependent counties.

Figure 12 presents additional workforce indicators for employment rates across counties. Employment rates were lowest in Pocahontas (38.4%) and Webster (38.5%) counties. The remaining counties had employment rates above the state average, and in the case of Grant, Greenbrier, and Tucker counties, rates greater than the benchmark average for both recreation dependent counties and the nation.

Figure 12. Share of Employment in Eight WV Counties, 2018-2022



Note: Source is from 2018-2022 5-year American Community Survey. The Figure shows the percentage of population that are employed. The bar for WV shows the average of the state over all the counties. The bar for USA shows the average of the nation over all the counties. The bar for Tourism shows the average of the tourism-dependent counties.

Housing Characteristics

Figure 13 presents four key indicators of the destinations' built environment: seasonal home share, median house value, median home age, and internet access share.

Seasonal homes are most prominent in Pocahontas (44.5%) and Tucker (30.7%), far exceeding all three benchmark averages. These elevated shares reflect the strong tourism influence and a high number of second homes. Pendleton (23.0%) also surpasses comparison benchmarks. In contrast, counties like Greenbrier (8.7%), Nicholas (8.1%), and Randolph (9.6%) show lower seasonal home rates, aligning more closely with the state and national averages.

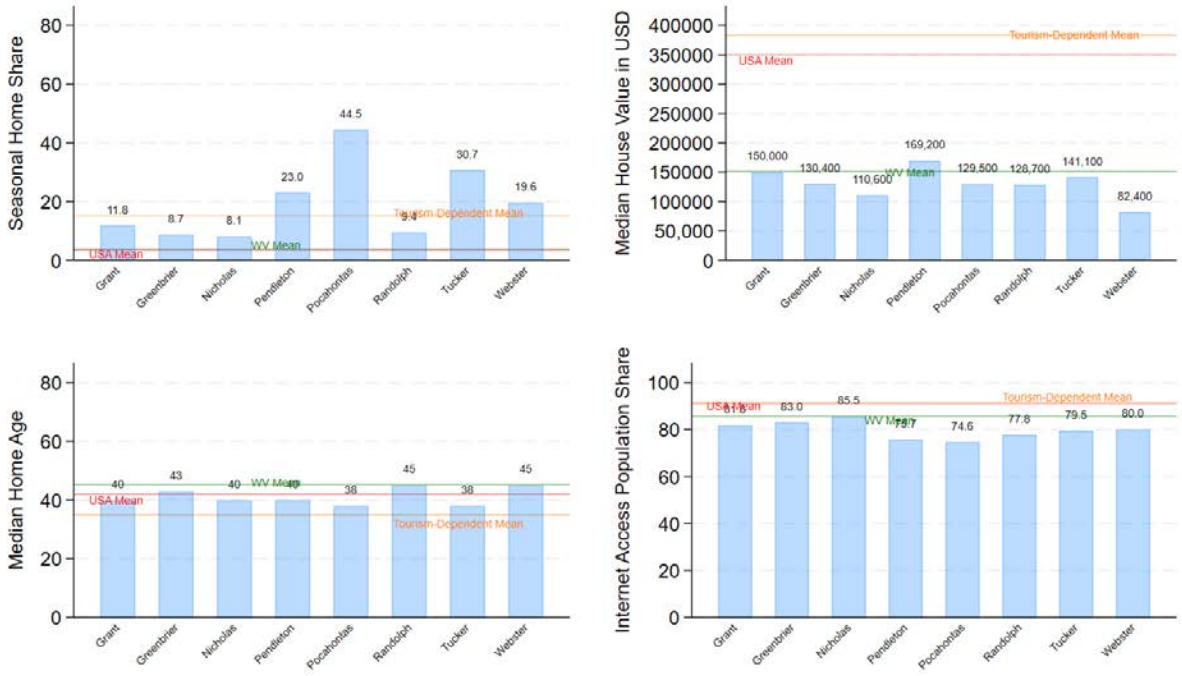
Median house values across all counties fall well below both the national average (~$350,000) and the tourism-dependent mean (~$375,000). Pocahontas ($169,200) reports the highest value among the group, followed by Tucker ($141,100) and Grant ($150,000). On the lower end, Webster ($82,400) and Nicholas ($110,600) highlight affordable housing options, but likely also reflect weaker housing markets or less economic activity, especially in the case of Webster County.

Most counties have housing stock of similar age to the national and West Virginia averages, though older than the typical tourism-dependent county (~35 years). Tucker, Randolph,

and Webster report the oldest homes (45 years), while Pendleton (38 years) and Pocahontas (38 years) have slightly newer housing. However, all of these figures suggest limited new construction in recent years.

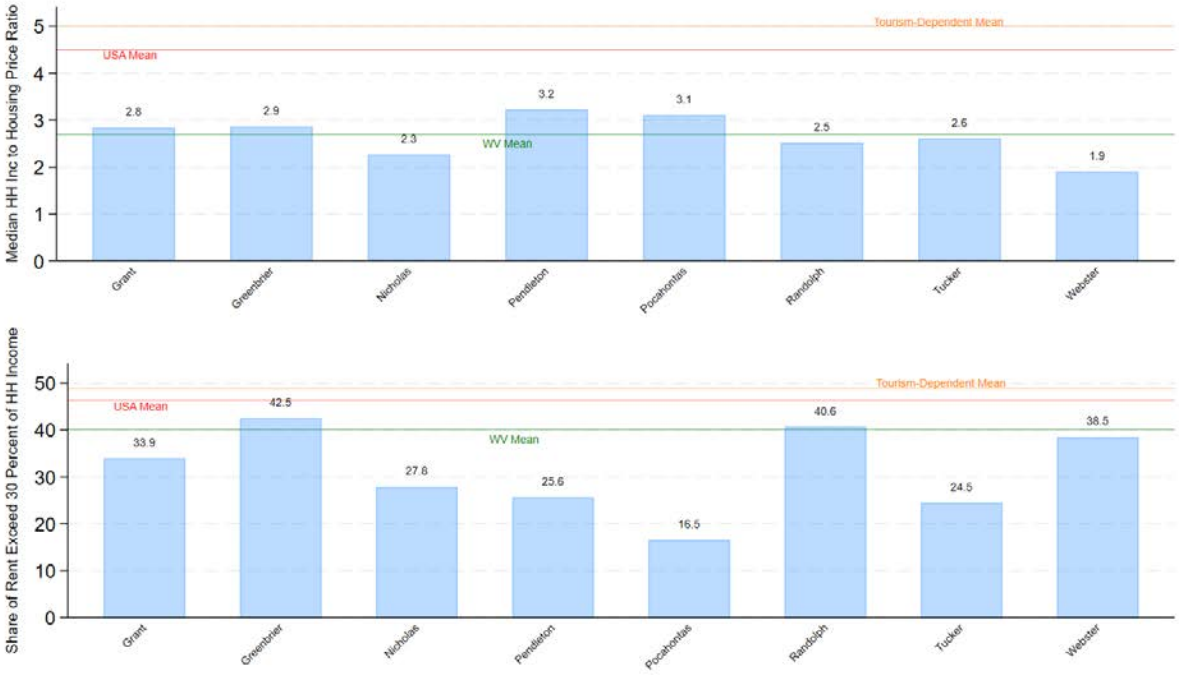
Internet access lags across the region, with all eight counties falling below the national average and most below the tourism-dependent benchmark. Nicholas (85.5%) and Greenbrier (83.0%) come closest, while Pocahontas (74.6%) and Pendleton (74.6%) have the lowest access rates. These gaps point to digital infrastructure challenges that could impact education, business, and remote work opportunities.

Figure 13. Home and Internet in Eight WV Counties, 2018-2022



Note: Source is from 2018-2022 5-year American Community Survey. The bar for WV shows the average of the state over all the counties. The bar for USA shows the average of the nation over all the counties. The bar for Tourism shows the average of the tourism-dependent counties.

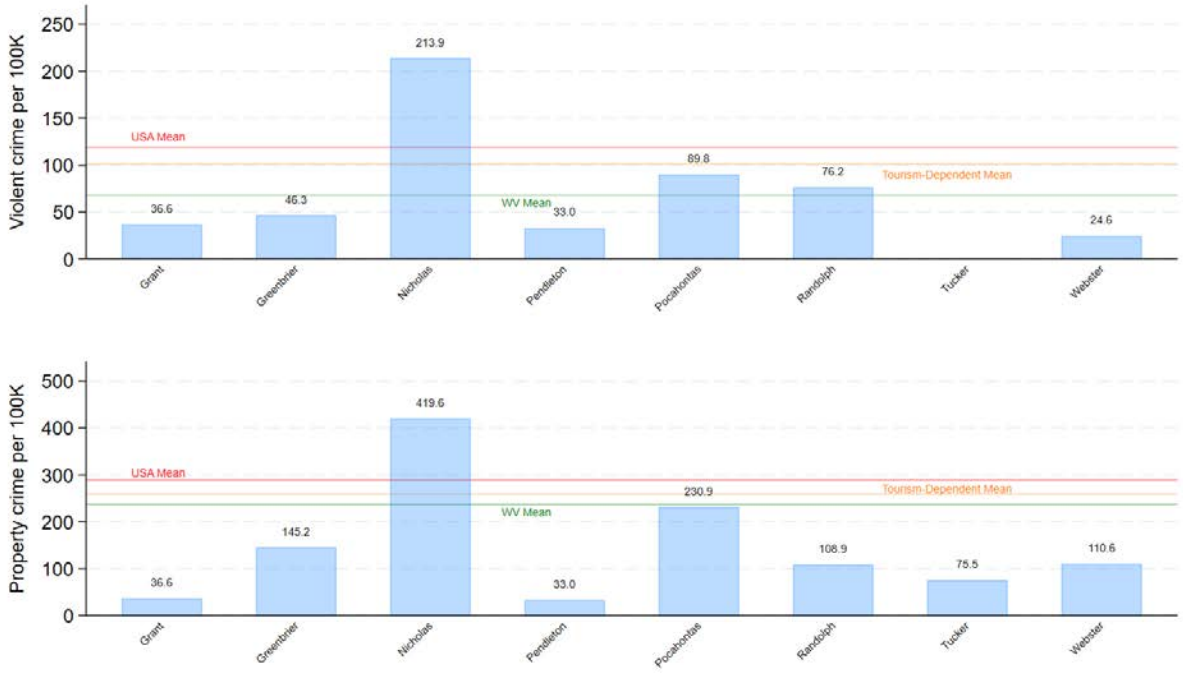
Figure 14. Home Affordability in Eight WV Counties, 2018-2022



Note: Source is from 2018-2022 5-year American Community Survey. The bar for WV shows the average of the state over all the counties. The bar for USA shows the average of the nation over all the counties. The bar for Tourism shows the average of the tourism-dependent counties.The top panel shows the median household income to housing price ratio and the bottom panel shows the share of renters that the rent exceeds 30% of household income.

Data on crime are presented in Figure 15. The overall crime picture for the eight counties is mixed. Nicholas County emerges as a clear outlier, with the highest levels of both violent and property crime, well above all comparison benchmarks. Pocahontas and Randolph show moderate crime levels, while the remaining counties—especially Grant, Pendleton, and Tucker—demonstrate very low crime rates, reinforcing their image as safe, rural communities.

Figure 15. Violent and property crime 2022 per 100K population for Eight WV Counties

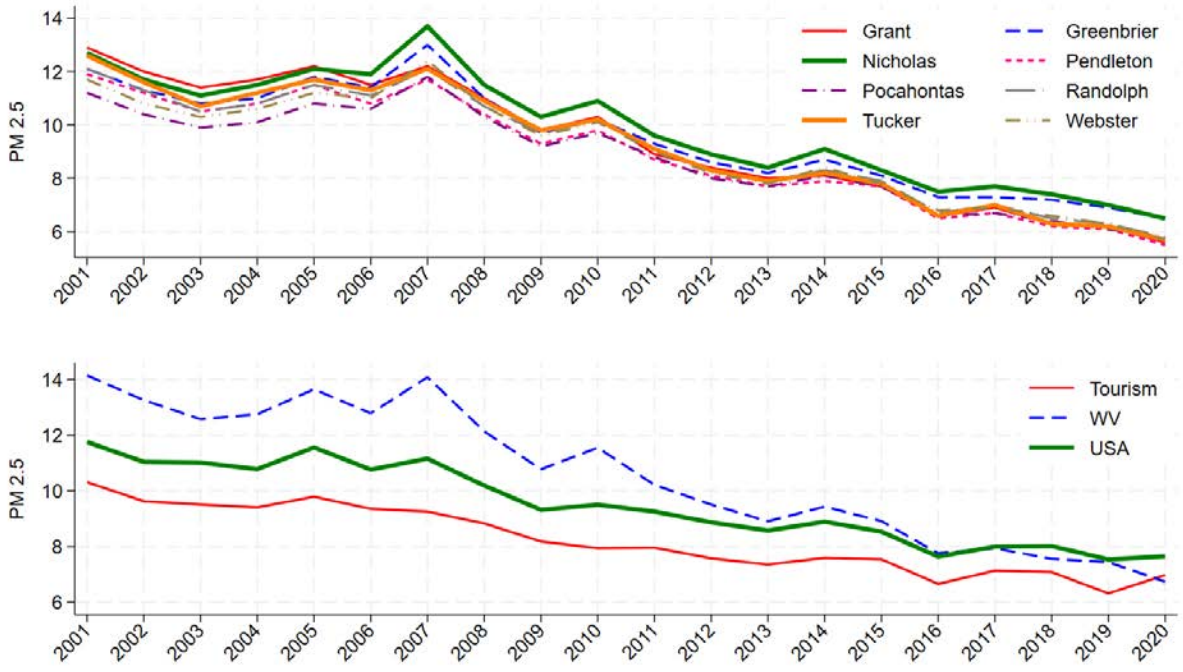


Note: Source is from Inter-university Consortium for Political and Social Research (ICPSR).

7. Environmental Indicators

The environmental quality of these counties can be assessed through several key metrics. Figure 16 tracks PM 2.5 levels from 2001 to 2020, showing generally improving air quality trends across all eight counties. The data, sourced from the CDC National Environmental Public Health Tracking Network, indicates that air quality in these counties has generally remained within acceptable ranges, likely benefiting from their rural location and extensive forest cover, as well as the general national trend of better air quality overall.

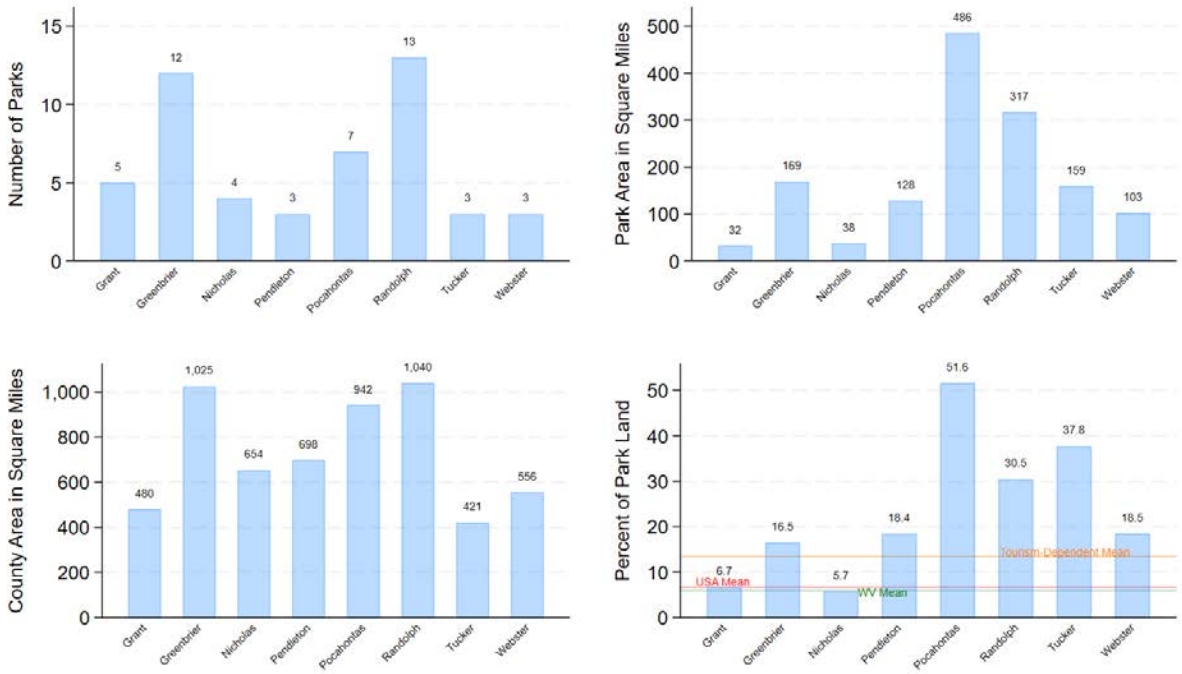
Figure 16. PM 2.5 2001-2020



Note: Source from CDC National Environmental Public Health Tracking Network with the most recent source year 2020 from https://ephtracking.cdc.gov/DataExplorer/

Figure 17 provides a comprehensive overview of parkland resources across the eight counties, showing the number of parks, total park area, land area, and the share of park area in each county. This data highlights the significant natural recreational resources available in the region, supporting both quality of life for residents and tourism opportunities.

Figure 17. Number of Parks, Park Area, Land Area, and Share of Park Area in Eight Counties 2022



Note: Source from National Neighborhood Data Archive. Parks refer to all the parks including public parks, some national and state parks, school and private parks w/ public access.

8. Recommendations and Policy Implications

While tourism has been a key driver of the region's economy, reliance on this single sector leaves the area vulnerable to external shocks. To create a more resilient economy, the region should consider how to leverage existing tourism assets in ways that strengthen other sectors of the economy. It is crucial to diversify beyond tourism. Promoting industries like renewable energy, healthcare, technology, and remote work could provide additional economic stability and long-term employment opportunities for residents while protecting or enhancing existing natural assets. Supporting entrepreneurship within these sectors could help to build a more resilient local economy.

A critical component of economic growth is workforce development. The region's employment rates and educational attainment levels vary across counties, and many areas could benefit from targeted investments in workforce training. Local colleges, vocational centers, and partnerships with businesses can offer certification programs and skill-building opportunities that align with the needs of both the tourism sector and emerging industries. Improving educational outcomes is also vital to attract and retain residents and talent. With lower-than-average bachelor's degree attainment in many counties, educational investments—such as scholarships, technical training, and partnerships with universities—could help bridge this gap. Higher education opportunities are key to building a skilled workforce that supports not only the tourism industry but also other emerging sectors that can drive economic diversification.

Finally, expanding the regions digital infrastructure is paramount. With internet access lagging behind national standards, particularly in rural areas like Pocahontas and Pendleton, it is vital to improve broadband connectivity. This would not only facilitate tourism business activities like accommodation and trip bookings, but also support remote work opportunities and e-commerce ventures, which can contribute to economic growth year-round.

To enhance the quality of life for residents and create a thriving, year-round economy, it is necessary to focus on improving local amenities, services, and infrastructure. Many counties in the region, particularly Tucker and Randolph, have seen a positive concentration of dining and accommodation establishments. However, counties like Webster and Grant have fewer of these services, suggesting an opportunity for growth in local amenities. By investing in local businesses, promoting the development of diverse dining options, and supporting small retail establishments, the region can foster a more vibrant local economy that meets the needs of both residents and tourists.

Policies that address affordable housing and the potential negative impacts of seasonal homes and short-term rentals should be prioritized. Counties like Pocahontas and Tucker have a high proportion of seasonal homes, which can drive up property values and make it difficult for residents to access affordable housing. Increasing the workforce housing supply and encouraging off-season tourism to spread demand throughout the year would help reduce strain on infrastructure, improve housing affordability, and provide more stable employment in the tourism industry.

Given the region's natural beauty and the integral role of outdoor recreation in tourism, it is essential to prioritize sustainable tourism practices that balance economic development with environmental conservation. The high share of seasonal homes in certain counties reflects the significant tourism influence but also highlights the need to manage growth carefully. To prevent over-tourism and preserve the regions unique natural assets, local leaders should focus on promoting tourism and building destination infrastructure that aligns sustainable growth.

The data suggests these counties face significant challenges but retain important assets in their natural amenities and tourism potential. Success will require balanced development that preserves natural resources while fostering economic growth and improved quality of life for residents.

9. References

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Appendix 1: Map layers and source notes:

Layer	Source
Tourism amenities (all types)	Esri ArcGIS Online Business Analyst, extracted from SafeGraph Point of Interest database (2022). Additional campgrounds added to the ”Accommodations” category assembled from multiple sources by WVU. Includes public campgrounds only (state and federal facilities). Includes campgrounds managed by WV State Parks, US Army Corps of Engineers, and USDA Forest Service. USFS campgrounds downloaded from USDA FS website, other locations mapped by WVU.
Vacation rentals	KeyData, includes AirBnB and VRBO short-term vacation rental locations (give date).
Recreation features – Boat launches	WV boating access points from WVDNR via WVGISTC, and USFS (combined into a single dataset).
Recreation features – Fishing	Stocked streams and lakes from WVGISTC, original source is WVDNR. Each location is represented by a single centroid point.
Recreation features – Hunting	Extracted from USGS Protected Areas Database (PAD), dataset of public lands. Each area is represented by a single centroid point.
Recreation features – Hiking trails	Trails from WVGISTC, originally from WVGISTC and WVDOT, with extensive editing to remove duplicates and multi-segment trails. Limited to trails allowing hiking. Each trail is represented by a single point located at the centroid of the trail.
Recreation features – Mountain bike trails	Trails from TrailForks website and WVGISTC Recreational Trails of West Virginia layer, with extensive editing to remove duplicates and multi-segment trails. Limited to trails allowing mountain biking. Each trail is represented by a single point located at the centroid of the trail.
Recreation features – Rock climbing	From Mountain Project website, a single point for each major climbing area location.
Recreation features – Snowmobile trail	USFS roads layer, features that permit snowmobile use. Each trail is represented by a single point located at the centroid of the trail.
Recreation features – Whitewater	American Whitewater, whitewater runs. Each run is represented by a single point located at the centroid of the run.
Recreation features – XC Skiing	WVU assembled this dataset based on internet searches for established cross country ski areas.
Recreation features – Alpine Skiing	WVU assembled this dataset based on internet searches for established alpine ski areas.

Table A1 Leisure and Hospitality Employment for Eight WV Counties 2000-2023

	Grant	Greenbrier	Nicholas	Pendleton	Pocahontas	Randolph	Tucker	Webster	Total
2000	171	2641	761	124	1012	899	576	83	6267
2001	199	2692	813	122	1033	889	586	80	6414
2002	202	2651	798	127	1005	909	577	82	6351
2003	211	2724	782	137	1005	925	551	89	6424
2004	205	2730	806	141	971	1008	607	89	6557
2005	204	2732	797	139	974	987	630	87	6550
2006	205	2794	802	166	910	1014	603	91	6585
2007	228	2690	779	138	865	949	558	91	6298
2008	237	2553	784	126	846	937	566	96	6145
2009	243	2323	792	117	782	914	534	108	5813
2010	255	2778	792	110	786	877	504	108	6210
2011	271	2986	809	113	753	862	507	97	6398
2012	232	2887	804	113	757	879	519	84	6275
2013	252	2811	820	117	771	945	569	76	6361
2014	230	2850	815	103	767	987	583	77	6412
2015	224	2864	854	124	757	956	559	82	6420
2016	215	2796	848	126	727	962	560	83	6317
2017	218	2880	838	117	752	953	506	74	6338
2018	241	2859	840	145	860	963	508	70	6486
2019	264	2844	865	127	909	946	494	78	6527
2020	242	2229	724	127	715	765	383	49	5234
2021	286	2509	756	152	851	795	481	68	5898
2022	270	2581	780	151	928	785	562	65	6122
2023	304	2849	788	151	887	817	554	63	6413

Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics. Due to QCEW data disclosure requirements, the highlighted employment numbers are derived from Tapestry data.

Table A2 Leisure and Hospitality Establishment for Eight WV Counties 2000-2023

	Grant	Greenbrier	Nicholas	Pendleton	Pocahontas	Randolph	Tucker	Webster	Total
2000	24	94	56	15	33	62	31	13	328
2001	24	94	58	14	33	66	29	14	332
2002	23	92	57	14	28	66	28	14	322
2003	23	89	57	15	30	67	30	14	325
2004	23	92	59	17	32	73	29	14	339
2005	21	97	61	18	36	72	28	14	347
2006	20	99	60	20	32	76	29	14	350
2007	22	102	58	17	28	76	29	13	345
2008	23	101	61	16	25	76	28	13	343
2009	22	99	57	16	23	75	27	15	334
2010	24	97	61	15	26	72	27	14	336
2011	27	101	63	13	25	72	28	16	345
2012	24	106	67	13	26	70	28	16	350
2013	26	106	66	14	27	73	29	13	354
2014	26	107	65	14	27	78	28	12	357
2015	25	105	64	16	27	74	28	12	351
2016	25	102	64	17	27	75	29	12	351
2017	24	101	63	17	26	78	28	10	347
2018	25	105	62	19	28	82	30	10	361
2019	23	103	65	16	30	79	29	9	354
2020	23	103	67	17	29	76	30	8	353
2021	25	103	65	19	30	78	31	10	361
2022	25	107	65	17	34	80	37	10	375
2023	28	114	67	19	36	81	38	10	393

Note: Source is from Quarterly Census of Employment and Wages from U.S. Bureau of Labor Statistics.