2008

Development of outdoor recreation resource amenity indices for West Virginia

Jing Wang
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Development of Outdoor Recreation Resource Amenity Indices for West Virginia

Jing Wang

Thesis submitted to the
Davis College of Agriculture, Forestry, and Consumer Sciences
At West Virginia University
in partial fulfillment of the requirements
for the degree of

Master of Science
in
Recreation, Parks, and Tourism Resources

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Morgantown, West Virginia
2008

Keywords: Amenity Index, Analytic Hierarchy Process (AHP), Geographic Information System (GIS), Outdoor Recreation Resources

Abstract

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Jing Wang

Tourism has been playing an increasingly important role in the economic development and promotion for the state of West Virginia. However, how tourism resources are spatially distributed across all the states' 55 counties and have not received much attention. This study could be among the first of its kind in West Virginia to create an inventory database for 21 types of major outdoor recreation/nature-based tourism resources, and spatially examine their distribution across counties. The quantity of tourism resources is determined by measuring their actual size, length, or number, and the quality of the resources is determined by using the Analytic Hierarchy Process (AHP) with consultation provided by West Virginia CVB directors. A four-level amenity index is created using the standard deviation method. In addition, the relationship between travel/tourism related economic benefits and amenity index values is also examined, though in a very simple manner. The results indicate that nature-based tourism resources are largely concentrated in the eastern state centering on the Pocahontas County. While it is found that nature-based tourism resources are positively related to economic benefits generated from travel and tourism, such a relationship is not significant when those gambling counties are considered. Research limitations and future research needs are discussed.

Acknowledgements

It is a pleasure to thank the many people who made this thesis possible.

First and foremost, I would like to thank my advisor and committee chair, Dr. Jinyang Deng, for his professional guidance, mentoring in my research, also for his patience and encouragements through the past two years.

I would also like to express my sincere appreciations to my graduate committee, Dr. Steven Selin, Dr. Chad Pierskalla and Peggy Pings for their excellent guidance and constructive suggestions on my project with their knowledgeable experience. I will also thank Dr. Robert Burns for his help in my proposal.

This project could not have been accomplished without the supports of all those CVB directors. I thank them all. Special thanks go to Mr. Bill Robinson, State Trails Coordinator of WV Division of Highways, for sharing with me a full list of local trails in the state. I also want to thank Ishwar Dhami and other graduate students in Room 339 for their help and encouragement; I really had a great time working with all of them.

I would like to give my special thanks to my husband, Youbin Tu, whose patient love enabled me to complete my research work.

Lastly, and most importantly, I wish to thank my parents, Tianyou Wang and Jianmin Zhang, for their boundless love and encouragement. To them I dedicate this thesis.

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Chapter 1. Introduction

Agriculture Secretary, Mike Johanns (2006), speaking at the 2006 Agriculture Outlook Forum, chronicled the changing face of rural America. Secretary Johanns noted that while only about 160,000 farm households are responsible for 75% of all cash receipts, 92% of agricultural producers, those managing about two-thirds of agriculture land in the United States, rely heavily on off-farm income to make a meaningful livelihood. These rural economic trends led Secretary Johanns to suggest that rural policies and programs need to pay special attention to providing greater economic opportunities for rural residents beyond agriculture -- “farmers need communities more than communities need farmers” (Selin, 2007).

Secretary Johanns comments foreshadow the important role that federal policy and programs play in strengthening rural communities struggling to make the transition from commodity-based economies to diversified economies of the twenty-first century (Steve Selin, personal communication, 2007). External forces such as globalization and technological change have led to a decline in traditional agricultural, forestry, and mining jobs in many rural areas, leading to a large population migration to urban areas over the past 50 years. According to Freudenberg (1992), employment in traditional farming has dropped by about 70% from the early 1900s and employment in other natural resource-dependent industries such as mining and forestry has been cut in half.

However, these macro-level economic and social trends are not uniform across all rural areas, and the major factors affecting migration patterns across the rural landscape have changed substantially over the last few decades (Nord & Cromartie, 1997). Those areas and places rich in scenic and recreational amenities had more substantial population growth than areas with low levels of natural amenities. For instance, Johnson and Beale (2002), in a national study of rural

counties, report a significant population rebound during the 1990s with “recreation counties” -- those selected with high tourism receipts and business activity -- leading the way with a 20.2% population increase compared to a 10.4% increase for all rural counties.

Natural amenities are not only linked to population growth, but to economic restructuring and economic well-being (Johnson & Beale, 2002; Shumway & Otterstrom, 2001). For example, Shumway and Otterstrom (2001) reported that counties rich in natural amenities experienced dramatic increases in employment in service sectors such as health care, personal services, recreation and entertainment, and professional services.

One important contributor to economic restructuring and economic well-being is tourism which has been regarded as an economic development tool for rural America since the late 1970s and early 1980s (Gartner, 2004) and many small towns are trying to acquire a share of this growing industry (Galston & Baehler, 1995). Both the pull factor (e.g., qualities inherent in a rural setting, such as personal contact, authenticity, heritage and individualism) and the push factor (e.g., increasingly urban-based population and associated problems) speed up rural tourism development. Demand for visiting rural areas has accelerated in recent years (Long & Lane, 2000), motivating rural communities to develop tourism for community development and economic diversification.

Since the Second World War, tourism has become one of the most important economic sectors in the world. In recent years, tourism has been growing at an annual average growth rate of 6.5%, according to the World Tourism Organization (WTO, 2006). In 2006, about 75 countries earned more than US\$1 billion from international tourism and the total international tourism receipts in that year were US\$733 billion, or US\$2 billion per day (WTO, 2006).

Tourism is also the largest service export and the third-largest retail sales industry in the United States. In 2006, the country ranked the third in international tourist arrivals (51.1 million visits) behind France and Spain, but the first in international tourism receipts (US\$85.7 billion) (WTO, 2006).

As with many other states in the country, tourism also plays an important role in promoting social and economic development in West Virginia, the second most rural state located on the east coast of the United States with abundant and unique tourism resources. Geographically, the state is surrounded by several large population centers including Pittsburgh and Washington D.C. with some 60% of the nation's population located within 500 miles of the state border. The geographical location and well maintained rural and natural atmosphere due to a relatively slow rate of growth and expansion provide a great opportunity for nature-based tourism development in the state.

According to the annual report of West Virginia's Division of Tourism, in 2006 there were 11.43 million overnight stays in West Virginia, an increase of 2% from 2005. Most of these overnight visitors were from the state itself and other nearby states including Ohio, Virginia, North Carolina, Pennsylvania, and Maryland. Besides the overnight visitors, the number of day trips was also very large. For example, in 2006 about 39.9 million people took day trips to and within West Virginia. Most of them were also from surrounding states. The travel spending by both overnight and day visitors in West Virginia was over \$3.97 billion in that year, equivalent to 10.9 million dollars per day.

Because of increasing tourist visits and tourism revenues, tourism has become the second largest industry in the state in terms of its total economic impact and employment, second to coal mining and followed by forestry (West Virginia Division of Forestry, 2006). Tourism promotion

and development in the state is also one of priorities in the Governor's agenda. For example, speaking of Ogleby Resort in Wheeling, WV as an inspiration for tourism development throughout the state, Governor Manchin emphasized that "state politicians need to think beyond their next elections and have a vision that includes tourism promotion" ("Manchin", 2007).

It is widely accepted that tourism development for a destination is largely dependent upon tourism resources that the destination possesses in terms of their quality and quantity. As far as "tourism promotion" is concerned, the question such as what, where, and how tourism should be promoted to be maximally profitable still remain largely unaddressed in the state. To answer this question, it is necessary to conduct a complete inventory of tourism resources and to evaluate tourism resource distribution across the state. To this end, this study attempts to: 1) develop an inventory of natural tourism resources for West Virginia; 2) develop an evaluation framework using the Analytic Hierarchical Process (AHP, Saaty, 1980); 3) use this framework to evaluate tourism resources; 4) create an index system; and 5) produce natural amenity index maps at the county level for the state.

Significance of the Study

The natural-amenity-driven rural development linkage has much for academics to discuss, conceptualize and discover (Marcouiller & Clendenning, 2005). Studies on natural amenities and associated economic development have increasingly received attentions from researchers during recent years. Previous studies have examined the relationship between natural amenities and population migration, housing prices and wages, regional economic growth, and employment growth. These studies typically involved the use of natural amenity index. Thus, how natural amenities are defined and then measured can largely affect the outcomes of such studies. Accordingly, the very first step for all natural amenity related studies is to develop a scientific

and practical measurement of natural amenity attributes. Unfortunately, researchers haven't reached a consensus as to what constitutes natural amenities and how natural amenities can be measured.

West Virginia deserves to be studied in this regard for several reasons. First, the majority of existing studies on amenity-based development primarily focused on the American West and the Northeastern Lake States while few researchers have ever paid attention to West Virginia or the central Appalachian area. Second, several index systems in other fields such as health care, income, and coal-bed methane have been created for the state; but the state does not have a natural amenity index system. Third, a statewide amenity index can help policy makers and planners make decisions to manage tourism resources in a sustainable manner. Finally, the natural amenity inventory from this study serves as one component for a project funded by WVU Regional Research Institute in which a complete inventory of tourism resources (i.e., natural resources, tourist attractions, festivals and special events, outdoor recreation facilities, etc.) will be developed and the distribution of tourism resources in relation to the distribution of economic benefits from travel and tourism will be spatially examined.

Terminology

Amenity: Amenities can be broadly defined as qualities of a region that make it an attractive place to live and work (Power, 1988).

Natural amenity: McGranahan (1999, p.1) defines a natural amenity as one "that enhances a location as a place of residence [and] pertains to the physical rather than social or economic environment."

Outdoor Recreation Resource Amenity: Any outdoor recreation resources that are attractive to visitors and can be used by both locals and visitors. These outdoor recreation resources could be primarily natural (i.e. national parks), or nature-based (i.e. golf courses, campgrounds)

Geographic Information System (GIS): GIS is a system of hardware, software and procedures to facilitate the management, manipulation, analysis, modelling, representation and display of georeferenced data to solve complex problems regarding planning and management of resources (NCGIA, 1990).

Multiple Criteria Analysis (MCA): MCA is a framework for ranking or scoring the overall performance of all decision options and against multiple objectives at the same time (Hajkowica & Collins, 2007). It is defined as a decision-making tool which is developed for complex multiple criteria problems; these problems include both qualitative and/or quantitative aspects in the decision-making process (Mendoza et al., 1999). There are many terms used to refer to Multiple Criteria Analysis (MCA), including the Multiple Criteria Decision Analysis (MCDA) and Multiple Criteria Decision Making (MCDM), which shares the same fundamental theoretical framework with MCA (Hajkowicz & Collins, 2007).

Analytic Hierarchical Process (AHP): AHP is a Multiple Criteria Decision Making technique, and is “an approach to decision making that involves structuring multiple choice criteria into a hierarchy, assessing the relative importance of these criteria, comparing alternatives for each criterion, and determining an overall ranking of the alternatives” (Saaty, 1980).

Expert Choice 11.5: A decision support software product developed by Dr. Ernest Forman, D.Sc. Professor of Management Science at George Washington University’s School of Business and Public Management, adapting AHP method (Expert Choice, 2007).

Wildlife management areas (WMAs): WMAs are public lands that are conserved and managed for a variety of wildlife species and to improve public access and recreational opportunities (WVDNR, 2003).

Limitations

Although a lot of effort has been put into the creation of a West Virginia nature-based tourism resources inventory, some limitations associated with this effort need to be identified. First, there is a certain level of resource overlap while amenity levels are estimated. For example, trails may also part of a state park, or national forests; a golf course may also belong to a resort state park. In addition, in the other attraction category, forest land may cover all forest lands in a state park, state forest, or national forest. However, sine this coverage applies to all counties, its impact is not a big concern. Second, in order to avoid resource overlap, some kinds of resources have to been excluded. For example, Spruce Knob-Seneca Rocks National Recreation Area is located within the Monongahela National Forest, and was not considered for amenity calculation. Third, there are so many other outdoor recreation/tourism resources and attractions in the state, some of which are not included in this study. For example, national natural landmarks are not considered in the study. Fourth, the relative importance for each type of outdoor recreation resources was obtained based on inputs from a group of West Virginia Convention and Visitors Bureau (CVB) directors. Opinions from this small sample of CVB directors may not be representative of other stakeholders. Fifth, relative importance may mean economic importance for some CVB directors while protection importance for some others. With this said, all CVB participants have achieved a high level of consistency in their importance ranking. Finally, the accuracy of resources measured by quantity may also be a concern for some types of resources (i.e., cabins, campgrounds) due to lack of information.

Chapter 2. Literature Review

In order to gain a better understanding of this study, a review of the relevant literature on previous studies on amenity index development and applications of multiple criteria analysis including AHP are presented in this section.

Amenity index development

Two approaches are evolving in measuring natural amenity attributes: a summary index approach and an aggregate factor score approach (Kim, Marcouiller, & Deller, 2005). The summary index approach defines natural amenities as a single index of different natural amenity attributes while the aggregate factor score approach categorizes a wide array of natural amenity attributes into multiple but similar groups (Kim et al., 2005).

McGranahan (1999) from USDA ERS of the USDA developed a summary index of each county's natural amenities that includes measures of mild sunny winters, moderate summers with low humidity, varied topography, mountains, and abundance of water area. This study found that there had been a strong association between the population change in rural counties and their natural amenities as places to live. The population was growing in the past 25 years in these counties which scored high in these amenities. The high-score counties almost doubled their population, while over half of the low-score counties lost population. They also found that employment change in rural counties was another element which has been highly related to natural amenities in the past 25 years.

Betz and Cordell (1998) from USDA Forest Service also developed an outdoor recreation resource index for every county in the United States as a national summary database which contained over 400 variables totally. However, most of the data were collected in the early 90s, which definitely need some update so as to reflect the current situation.

The summary index approach as discussed above is not without problems. First, decisions about which amenity attributes should be incorporated to develop a single summary index are quite subjective (Kim et al., 2005). Second, the relative importance of selected attributes was not considered. Third, attributes selected to develop such a summary index are climatically and geographically related which may apply to a large region (i.e., the whole country) but may not work out for a smaller area (i.e., West Virginia), where climate and geographical features vary slightly across all counties. Finally, the use of climate and geographical attributes for the development of such an index rather than the use of entities (i.e., national parks, golf courses, state parks, etc.) and associated characteristics (i.e., scenic beauty, size, accessibility, etc.) may cover the reality of natural amenities of an area. For instance, counties located within or nearby the Monongahela National Forest are of similar climate and geographical characteristics, and the natural amenity index for each of these counties may be more or less the same (in fact, they are almost the same in natural amenity index as reported by McGranahan, 1999) if calculated based on such attributes. However, in reality, significant changes occurred in counties nearby Snowshoe Resort and Spruce Knob/Seneca Rocks National Recreation Area (Siniscalchi, Pierskalla, Selin, & Palmer, 2006). These counties if measured by proximity to entities will definitely score higher than others.

Alternatively, several recent studies have evaluated the economic impacts of natural amenity attributes using the aggregate factor score approach (e.g., Deller, Tsai, Marcouiller, & English, 2001; English, Marcouiller, & Cordell, 2000; Henry, Barkey, & Bao, 1997; Marcouiller, Kim, & Deller, 2004; Spotts, 1997). Principal component analysis or factor analysis was used in all of these studies to produce smaller sets of factors that can

be used in subsequent modeling such as regression analysis (Kim et al., 2005). For example, Spotts (1997) classified Michigan's tourism resources into five groups using factor analysis: urban tourism resources, general wildland tourism resources, general coastal tourism resources, parkland tourism resources, Lake Michigan coastal tourism resources, and canoeing/ORV riding tourism resources. More recently, Kim et al. (2005) used principal component analysis to categorize amenity attributes into five general groups: land-based, river-based, lake-based, warm-weather-based and cold weather-based. A big difference of their studies from previous ones is the calculation of the spatial dependence of natural amenities using a spatial error model (SEM).

Compared to the single index approach, aggregate factor score approach is less subjective and more scientifically sound and practically reasonable by including entities such as state parks as well as the magnitude of such entities (i.e., size measured by acres) and considering the clustering distribution of such entities. However, the final measures (factor scores) may not be easy to interpret and to map compared to the single index approach. Moreover, the relative importance of selected attributes was not considered in this approach. Spotts (1997, p. 14) noted that "since qualitative considerations obviously influence tourist decisions, it clearly would be useful to incorporate qualitative measures in future inquiries (assuming this can be scientifically accomplished)."

In order to develop an index that includes the advantages of both groups while avoiding the disadvantages of them, a new innovative method is needed. Both qualitative and quantitative analysis should be involved in this method. As discussed below, this proposed project will develop a natural resources amenity index based on the theory of the Analytical Hierarchical Process (AHP, Saaty, 1980).

Multiple criteria analysis and AHP

According to Hajkowitz and Collins (2007), the MCA contains three elements:

1. a set of decision options which need to be ranked or scored by the decision maker;
2. a set of criteria, typically measured in different units; and
3. a set of performance measures, which are the raw scores for each decision option against each criterion (Hajkowitz & Collins, 2007).

MCA is a decision-making tool which is developed for solving complex problems. When making a decision, it is hard to reach a general consensus in a multidisciplinary team. By using MCA everyone in the team doesn't have to agree with the relative importance of the criteria or the rankings of the options. Every member's judgment will contribute to the final conclusion in a distinct and identifiable way.

MCA has been applied in many fields from economic analysis to environmental impact evaluation (Villa, Tunesi, & Agardy, 2001), such as water management, climate change, natural attraction evaluation, and tourism destination evaluation. The MCA can also be employed to evaluate the tourism destinations and achieve a ranking for these destinations. For example, Anastasios and Fotis (2006) from the Technological Education Institution of Western Macedonia conducted a study about scenarios analysis of tourism destinations using a multi-criteria decision-making framework to evaluate and rank three tourism destinations in northern and central Greece.

AHP is one of the MCA methods, which approaches decision making by arranging the important components of a problem into a hierarchical structure similar to a family tree. The theory of AHP will be adopted in this study to create a hierarchy structure of amenity attributes. The AHP breaks down a complex unstructured situation into its component parts which are

arranged into a hierarchical order with relative weights being assigned based on experts' judgments. For this study, a Panel of experts will be invited to identify natural attributes, construct hierarchical structure, and assign relative importance to each element on each layer of the structure.

Strager and Rosenberger (2006, p. 81) identified several advantages by using AHP as the weight solicitation technique for a decision making process:

- 1) The number of criteria made many of the other weighting methods infeasible.
- 2) The AHP method allows for many criteria to be simplified to individual comparison choices.
- 3) The time constraints required each participant to take the test (i.e., perform comparisons) at the same time. AHP could be administered as an individual test.
- 4) AHP has one of the strongest theoretical foundations and the ability to easily incorporate the normalized weights into a GIS ranking model.
- 5) The availability of AHP software made calculations easy and provided many display tools to quickly view results.
- 6) Group and individual comparisons could be made to identify trends and potential trade offs.

Because of these advantages, since it was first proposed in the early 70s, AHP has been used widely in fields such as business, energy, health, resource management, and transportation (Deng, King, & Bauer, 2002). By 2000, 1600 dissertations and published papers have applied this method (Expert Choice, 2000). The following is a review of AHP applications with focus on tourism studies.

A number of studies have been conducted on land preservation by using the AHP method. Land conservation is the most lucrative and important sector of the tourism industry (Chen, 2006). For example, Strager and Rosenberger (2005) identified and mapped high priority areas for land conservation in the Cacapon River Watershed, West Virginia using the AHP and GIS. A total of 31 participants belonging to two groups (i.e., the outside expert group and the stakeholder group) participated in this study that involved a paired comparison of 32 criteria on four general categories: agriculture, forest, water quality, and rural heritage. The outside expert group consisted of regional professionals working in the fields of agriculture, water quality, rural heritage, or forestry as resource managers, biologists, or scientists while the stakeholder group was further comprised of both The Cacapon Land Trust board members and local residents from the targeted watershed. The study found that outside experts were significantly different from the stakeholders in four of 11 criteria, resulting in 76% of the same high priority locations being identified and mapped for the watershed.

Duke and Aull-Hyde (2002) also conducted research to study land preservation using AHP. In their study, in order to gain public's value for preservation land, they applied the AHP to general population survey data. A total of 129 Delaware residents were interviewed about their preference for preserved land. In their survey respondents were asked to compare the environmental, agricultural, growth control, and open-space attributes of preserved land. AHP was used to identify the relative weights of these four attributes and compare the relative weights of qualities within each of these four attributes. In conclusion, they found that public preference is strongest for the environmental and agricultural attributes while growth control and open space are found to be less important.

The AHP method can also be applied on studies regarding site selections and land-use plans. Chen (2006) did a study on convention site selection by using AHP approach in Taiwan. In his study, Chen first developed a three-level hierarchical structure. The highest level of the hierarchy is the overall goal. Under the goal, the second level is represented by five criteria which are meeting and accommodation facilities, costs, site environment, local support, and extra conference opportunities. These five factors affect convention site selection. In the third level there are 17 sub-criteria totally. Once the structure was built, Chen conducted a survey to 50 academic-related association directors with a response rate of 70.0%. In the questionnaire, participants were asked to do the pairwise comparisons of the elements in each level. Finally, by analyzing the data, the author calculated the weights for each criterion in convention site selection, and concluded that meeting and accommodation facilities and site environment rank the top of all these criteria in convention site selection.

A case study conducted by Carr and Zwick (2005) in north central Florida applied the Land Use Conflict Identification Strategy (LUCIS) to predict where the land use conflict within the study area will likely occur in the future. In order to create a map of preferences for each land use type, they also employed the AHP method by using the Expert Choice software to determine the weights. In conclusion, they classified the study area into seven combinations of the no potential conflict/potential conflict zones (i.e., no conflict preferred for conservation land use, no conflict preferred for urban land use, no conflict preference for agricultural land use, conflict between urban and agriculture preference, conflict between urban and conservation preference, conflict between conservation and agriculture preference, and conflict among all three land use preferences).

In land use planning, land use suitability and land use allocations are two critical issues (Mendoza, n.d.). Mendoza found that a GIS-based multi-criteria approach offered momentous advantages to land suitability analysis and allocation. Therefore, besides regression analysis, in the study Mendoza also proposed the AHP method to land use suitability analysis and pointed out some advantages that AHP offers over the classical site suitability analysis techniques. One of these advantages is that the use of AHP makes sure the suitability maps are comparable for all land uses. Then Mendoza described an integrated GIS-based model to serve as a guide to optimally allocate lands to their potential uses. It is obviously that the integration of AHP and GIS is really functional and broadly-used in terms of land use planning.

The AHP is also a good tool for decision making process. Ananda and Herath (2008) used the AHP method to determine optimal forest land- use choices by measuring stakeholders' preferences in the Northeast Victoria, a large region with different land use, forest type, and stakeholders. They conducted a survey among five stakeholder groups which are the timber industry, environmental group, farmers, recreation group, and tour operators. There are 2,332 usable pairwise comparisons and, as the authors mentioned in the paper, the overall mean consistency ratio (CR) of the comparisons was 12.1% which is acceptable for surveys administered to the general public. Their results indicate that the AHP method can validate public participation in decision making and increase the reliability of the process.

In order to incorporate local preferences into decision making process, Cox, Alwang, and Johnson (2000) also chose to employ the AHP method to measure local preferences for economic development outcomes. Instead of general population, in this research the authors chose local government and business leaders in three counties of Virginia to participate in the ranking process. After the 13 leaders did the pairwise comparisons, the authors obtained the final

ranking and weights of seven impacts of economic development which are cleanliness of industry, average wage or salary, impacts on property values, number of jobs, level of capital investment, level of utility requirements, and impacts of population growth. Based on these weights, the author ranked the top 20 industries for each of the three counties. This research could also be a non-economic impact assessment reference for each industry.

The last study (Moran, McVittie, Allcroft, & Elston, 2007) to be reviewed involves the determination of the agri-environmental policy priorities in Scotland. Two methods-- the AHP and choice experiments (CE)—were used in their study to measure public preferences. As an attempt to improve the performance of both AHP and CE, this study applied a four-stage process to define the relevant policy attributes. This four-stage process involves an initial literature review, focus groups across Scotland, an initial ranking survey, and the comparison of two methods is at the policy level. The adult population of Scotland was sampled in this study. After conducting two separate surveys, the author used two different sectors to describe the choice experiment results and the AHP results individually. In conclusion, the authors compared the results from the two methods and discussed the differences between the two.

Chapter 3. Methodology

To achieve the objectives of this study, four phases will be conducted; including a GIS dataset focusing on outdoor recreation resource or nature-based tourism assets, an AHP based tourism resource evaluation framework, development of amenity indices, and index mapping. A detailed description of these phases follows after the discussion of the study area.

Study area

West Virginia, a state located on the east coast of the United State, is the only state in the nation located entirely within the Appalachian Mountain range, and in which most of the state are mountainous. For this reason West Virginia is called “The Mountain State”.

The mountain state contains numerous tourism resources which are unique and are not available within the surrounding states. Besides its natural beauty, it is also known as a tourist destination for those people who are interested in outdoor activities such as skiing, whitewater rafting, rock climbing, fishing, hiking, mountain biking and hunting.

According to a Division of Tourism annual report, in 2006, tourism created 44,000 jobs, generated \$3.97 billion in spending and \$546 million in local and state taxes (West Virginia Division of Tourism, 2007).

According to this agency, the most popular trip activities for West Virginia visitors are touring, outdoor recreations, gaming, attending special events, shopping, visiting a resort and visit a city. These activities largely depend on the tourism resources in West Virginia. In this study, we mainly focus on the natural resources in the state.

West Virginia is rich in natural resources. There are seven national park units, three national forests with one (i.e., Monongahela National Forest) being entirely located within the state

boundary, 36 state parks, nine state forests, and 75 Wildlife Management Areas (WMAs) within the state. In addition, the state is also a home to many rivers, lakes, springs, golf courses, among others. These nature-based tourism resources provide great tourism opportunities for tourists who travel in West Virginia.

In addition, there are also two National Wildlife Refuges located in West Virginia, one is Canaan Valley National Wildlife Refuge which is in Tucker County; the other is Ohio River Islands National Wildlife Refuge, which includes twenty-two islands along the Ohio River.

The study area of this project is the state of West Virginia, which contains a total of 55 counties. The state is located in the northeast of the United State and is surrounded by Pennsylvania, Ohio, Kentucky, Virginia, and Maryland (Figure 1). The capital city of the state is Charleston which is the largest city in the State (Figure 2).

Figure 1. The location of West Virginia in the United States

55 Counties in West Virginia

Designed by Jing

Figure 2. The 55 counties in West Virginia

Development of a GIS dataset of outdoor recreation resources

A GIS dataset of natural tourism resources will be prepared at the county level; this database will be built primarily based on information from: 1) WV GIS Technical Center, 2) face to face interview with CVB staff, 3) county and regional travel brochures, and 4) tourism websites.

Evaluation of tourism resources

Identification of tourism resources evaluators in the state

There are 26 CVBs located in West Virginia (Figure 3), which are somehow evenly distributed across the state. A call was made by the author in May 2008 to each CVB director asking her or him to participate in this study. Of the 26 persons contacted, 14 were willing to be involved in this study, resulting in a response rate of 53.8%. Among these 14 CVBs (Appendix A), seven are located in the south part of the state; the other seven in the north. Most of them represent one county; some (i.e., the Southern West Virginia CVB) cover several counties in one region.

A package containing a cover letter (Appendix B), a copy of questionnaire (Appendix C), a stamped and self-addressed envelope was then mailed to them. Following Dillman's Total Design Method (Dillman, 2000), a follow-up reminder call was made or email was sent to those who received the questionnaire but did not return it within two weeks. A full package of survey documents was sent to those individuals who did not respond within four weeks.

West Virginia Convention and Visitors Bureau

Figure 3. CVBs distribution in West Virginia

Of the 14 participants, seven were willing to meet with the author to talk more about this study as well as issues on tourism resource protection and tourism development at the local and state levels. Field trips were then made by the author to meet with these CVB participants in May and June, 2008.

Determination of criteria to evaluate tourism resources

Based on the author's knowledge and with inputs from her thesis examination committee members, natural resource amenities in the state mainly consist of national parks, national forests, state parks, national scenic byways, state or local scenic roads, trails, state forests, wilderness management areas, fishing areas, lakes, springs, golf courses, resorts, agriculture, forest land, and others. This list was then finalized with inputs from CVB participants (Table 1).

AHP hierarchy construction

Two AHP hierarchy structures (Appendix C) were constructed using a format similar to the one used by Strager and Rosenberger (2006). This format is also the default for the Expert Choice 11.5, a software specifically designed for constructing an AHP structure and analyzing AHP data.

The first AHP structure relates to pairwise comparisons of relative importance of aforementioned tourism attraction entities identified in Table 1. These entities were categorized into five general groups: parks, trails, resorts, water resources, and other attractions. This categorization is used because the current AHP extension (ESRI, 2004) for GIS only works with five criteria.

The second AHP structure focuses on attribute comparisons related to entities. Seven attributes are identified by drawing upon the literature as well as by reference to inputs from CVB directors. These attributes are biodiversity, scientific values, scenic beauty, resource rarity, accessibility, naturalness, and popularity. Information collected from this

section was not used for this study due to the complexity of comparisons of each element for all 55 counties, which is beyond the scope of this study.

Table 1. *Natural Tourism Resources*

	Name	Size /length/number	Location	Others
	National parks			
	National forests			
	State parks			
	National scenic byways			
	State or local scenic roads			
	State forests			
	Trails			
	Wildlife management areas/			
	National wildlife refuges			
	Fishing ponds			
	Lakes			
	Springs			
	Rivers/streams			
	Golf courses			
	Resorts			
	Agriculture			
	Forest land			
	Others			

For both AHP structures, participants were asked to assign a number to indicate the relative importance of one element against another based on the scale adapted from Saaty (1987) and described in Table 2. As shown, instead of traditional nine values only five levels of importance are included in the study to reduce the cognitive burden of participants (cf. Strager & Rosenberger, 2005). This reduction to five levels of comparison is also consistent with what is designed in the Expert Choice software.

Table 2. *The AHP Scale for Paired Comparisons*

Intensity of Importance	Determination and Explanation
1	Two attributes are equally important
3	One attribute is slightly more important than the other
5	One attribute is moderately important over the other
7	One attribute is very important over the other
9	One attribute is extremely important over the other

Based on the criteria identified in Table 1, an inventory of outdoor recreation resources for each of 55 counties was conducted based on aforementioned information sources. An inventory sample is presented in Appendix D.

Procedures of the AHP

The first step of the AHP process is to construct a comparison matrix for criteria and objectives for participants to perform pairwise comparisons. The matrix can take the following form (cf. Strager & Rosenberger, 2005):

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{bmatrix} \quad (3)$$

Where a_{mn} is the pairwise comparison rating for criterion m and criterion n . For the pairwise comparisons, Duke and Aull-Hyde (2002) and Saaty (1987) note the axioms of theoretical validity of the comparison matrix A (as cited in Strager & Rosenberger, 2005):

- 1) Reciprocal comparison: if $a_{mn} = x$, then $a_{nm} = 1/x$, where $x \neq 0$.
- 2) Homogeneity: if characteristics m and n are judged to be of equal relative importance then, $a_{mn} = a_{nm} = 1$ for all m .
- 3) Independence: when expressing preferences under each criterion, each criterion is assumed to be independent of the properties of the decision alternatives.
- 4) Expectations: when proposing a hierarchal structure for a decision problem, the structure is assumed to be complete

For implementing the AHP method, a sample size of one is enough, because it was originally developed for a single decision maker to select an alternative among multiple alternatives. Right now the method has been extended to be used for group decision making (Duke & Aull-Hyde, 2002). In this case, the geometric mean is calculated in place of individual ratings (Strager & Rosenberger, 2005). The study calculated the geometric mean based on data collected from the participating CVBs.

The a_{mn} values represent the relative degree of importance of criterion m over criterion n . To combine the responses, the geometric mean has to be computed. With a survey of p respondents, a composite judgment of their a_{mn} values, is the geometric mean of the a_{mn} values which is defined as:

$$a_{mn}^* = p \sqrt[p]{\prod_{k=1}^p a_{mn}^k} \quad (1)$$

With the geometric averaged a_{mn}^* values, a set of numerical weights $w_1, w_2, \dots, w_i$ may be computed to represent the relative degree of importance assigned to each criterion (Strager & Rosenberger, 2005).

The AHP provides a procedure for checking the consistency of expert judgment in the process of pairwise comparison of factors. Now, an index (CI) that provides a measure of departure from consistency can be computed:

$$CI = (\lambda_{\max} - n)/(n - 1) \quad (2)$$

Where n denotes the size of the comparison matrix. The closer $\lambda_{\max}$ is to n (or CI is to zero), the better the consistency of judgment; otherwise, a problem of inconsistency is implied. Suggested by Saaty (1982) that a CR value of less than 10% demonstrates good consistency in judgment. If the value had exceeded 10%, the adjustment was needed (Banai-Kashani, 1989).

In this study, all above calculations will be conducted by the software, *Expert Choice*.

Development of amenity indices

Two types of natural amenity indices will be created, including 1) quantity amenity index, and 2) quantity-quality amenity index. The first type of amenity index will be created using the principal component analysis, a method that has been typically used in previous studies (i.e., Kim et al., 2005; Spotts, 1997). That is, the quantitative natural amenity data will be factor analyzed into several factors, each factor representing an amenity domain. Spotts (1997) computed standardized scores for each factor and divided Michigan counties into five levels in terms of factor 1—urban tourism resources: greatly below average (scores below -1.9 standard deviations); below average (-1.0 to -1.9 standard

deviations); near average (-0.9 to +0.9 standard deviations); above average (1.0 to 1.9 standard deviations); and greatly above average (scores above 1.9 standard deviations).

The second type of amenity index will be created by taking into consideration both the quantity and quality of natural amenity resources. The quality of natural amenity resources will be determined by the relative importance of resource entities assessed by CVB participants. This will be done by combining the relative importance matrix for those entities with the magnitude of each entity using the GIS AHP extension.

Index mapping

Corresponding with the above two methods are two types of index maps that will be created for the state. The first type of index mapping will use principal component scores obtained from the principal component analysis of natural amenity resources. Each factor from the principal component analysis will be spatially displayed using GIS. Standard deviation method (cf. Deng, King, & Bauer, 2002; Spotts, 1997) will be used to classify amenity values into four levels.

The second type of maps will be created automatically by GIS into several classes. These classes will then be reclassified into four levels in consistence with the type one. This will allow two types of maps to be compared.

In sum, the above description of methods for this study can be outlined in the following diagram:

Figure 4. Schematic diagram of the research plan

Chapter 4. Results

In this section, an inventory of major tourism/outdoor recreation resources in the state will be presented, followed by a summary of AHP results using the Expert Choice, factor analysis results, and index mapping.

Inventory of tourism/outdoor recreation resources

As mentioned in the methods section, outdoor recreation amenities were inventoried based on five categories: Parks (including national/state parks, national/state forests, and wildlife management areas), byways/trails (including national/state byways, state backways, and local trails), resorts (including golf courses, skiing resorts, cabins, and campgrounds), and other attractions (i.e., farm land, forest land, pasture/grassland, and wetland).

Parks

National park units

Table 3 presents the distribution of national park units by county in the state. Although there is no such a place in West Virginia that is named “national park”, there are seven national park units entirely or partly located in the state. They are: 1) New River George National River, 2) Gauley River National Recreation Area, 3) Bluestone National Scenic River, 4) Chesapeake Bay Gateways Network, 5) Harpers Ferry National Historical Park, 6) Chesapeake & Ohio Canal National Historical Park, and 7) Appalachian National Scenic Trail.

As shown in the table, the Chesapeake & Ohio Canal National Historical Park and Appalachian National Scenic Trail are de facto trails and measured by length. The remaining five National Park Units totals up to 941,847 hectares (2,327,354.6 acres), accounting for approximately 15.0% of the area for the whole state.

Table 3. *Distribution of National Park Units by County in West Virginia*

County	Name	Size		Length	Total
		Acres	Hectares	(km)	(ha/km)
Berkeley	Chesapeake Bay Gateways Network	205,925.27	83,335.00	-	83,335.00
	Chesapeake & Ohio Canal National Historical Park	-	-	29.63*	29.63*
Fayette	Gauley River National Recreation Area	4,702.42	1,903.00	-	18,631.00
	New River George National River	41,335.79	16,728.00	-	
Grant	Chesapeake Bay Gateways Network	307,196.47	124,318.00	-	124,318.00
Hampshire	Chesapeake Bay Gateways Network	412,653.63	166,995.00	-	166,995.00
	Chesapeake & Ohio Canal National Historical Park	-	-	17.78*	17.78*
Hardy	Chesapeake Bay Gateways Network	374,040.95	151,369.00	-	151,369.00
Jefferson	Chesapeake Bay Gateways Network	135,562.01	54,860.00	-	55,372.00
	Harpers Ferry National Historical Park	1,265.18	512.00	-	
	Chesapeake & Ohio Canal National Historical Park	-	-	16.10*	40.77*
	Appalachian National Scenic Trail	-	-	24.67*	

(Table continues)

Table 3. (continued)

County	Name	Size		Length	Total
		Acres	Hectares	(km)	(ha/km)
Mercer	Bluestone National Scenic River	689.42	279.00	-	279.00
Mineral	Chesapeake Bay Gateways Network	210,827.84	85,319.00	-	85,319.00
	Chesapeake & Ohio Canal National Historical Park	-	-	19.25*	19.25*
Monroe	Appalachian National Scenic Trail	-	-	22.19*	22.19*
Morgan	Chesapeake Bay Gateways Network	147,136.43	59,544.00	-	59,544.00
	Chesapeake & Ohio Canal National Historical Park	-	-	73.88*	73.88*
Nicholas	Gauley River National Recreation Area	6,340.72	2,566.00	-	2,566.00
Pendleton	Chesapeake Bay Gateways Network	446,647.92	180,752.00	-	180,752.00
Raleigh	New River George National River	22,306.20	9,027.00	-	9,027.00
Summers	New River George National River	6,770.69	2,740.00	-	4,340.00
	Bluestone National Scenic River	3,953.69	1,600.00	-	

Note. Segment length of the Chesapeake & Ohio Canal National Historical Park and Appalachian National Scenic Trail for relevant counties is estimated based on the GIS shapefiles provided by the WV GIS Technical Center. These two national park units are trails at the

national level in nature and will be considered as national byways for the purpose of amenity estimation.

National forests

There are three national forests which are entirely or partly located within the state. The Monongahela National Forest is entirely located within the boundary of the state while the other two, George Washington National Forest and Jefferson National Forest, are marginally located in the state boundary. Table 4 presents the acreage distribution of national forests for each county. As shown, the three national forests stretch across 12 counties in the state with a total area of 1,024,602.57 acres (414,641.95 hectares), accounting for about 6.0% of the total area of the state. Pocahontas County had the largest share of the national forests with almost one third or 288,799.72 acres (116,873.10 hectares) of the Monongahela National Forest within its boundary.

Table 4. *National Forests in West Virginia**

County	Name	Size		Total (ha)
		Acres	Hectares	
Grant	Monongahela National Forest	21,528.41	8,712.24	8,712.24
Greenbrier	Monongahela National Forest	128,874.95	52,153.84	52,153.84
Hampshire	George Washington National Forest	4,716.99	1,908.90	1,908.90
Hardy	George Washington National Forest	50,553.31	20,458.20	20,458.20
Monroe	Jefferson National Forest	18,526.01	7,497.21	7,497.21
Nicholas	Monongahela National Forest	25,544.47	10,337.48	10,337.48
Pendleton	Monongahela National Forest	75,024.13	30,361.19	50,233.68
	George Washington National Forest	49,105.99	19,872.49	
Pocahontas	Monongahela National Forest	288,799.72	116,873.10	116,873.10

(Table continues)

Table 4. (*continued*)

County	Name	Size		Total (ha)
		Acres	Hectares	
Preston	Monongahela National Forest	5,069.29	2,051.47	2,051.47
Randolph	Monongahela National Forest	207,896.92	84,132.90	84,132.90
Tucker	Monongahela National Forest	93,024.60	37,645.72	37,645.72
Webster	Monongahela National Forest	55,937.76	22,637.21	22,637.21
Total		1,024,602.55	414,641.95	414,641.95

Note. GIS was used to estimate the acreage distribution of Monongahela National Forest in each county based on information provided by WV GIS Technical Center. The total area of the Monongahela National Forest is 901,700.26 acres or 364,905.15 ha. This number is not exactly the same as the official number of 909,000.00 acres for the forest due to the errors occurred during the GIS digitization and estimation.

State forests

There are nine state forests in the state that straddle nine counties with a total area of 82,672.46 acres or 33,456.35 hectares. Most of these parks are located in the southern West Virginia (Table 5). Seneca State Forest in Pocahontas is the largest in size (11,500.00 acres or 4,653.88 hectares) while Calvin Price State Forest in Greenbrier is the smallest (319.26 acres or 129.20 hectares). Pocahontas County has a total of state forest land of 21,178.19 acres or 8,570.51 hectares, the largest among the nine counties, followed by McDowell (10,640.00 acres or 4,305.86 hectares), Kanawha (9,250.00 acres or 3,743.34 hectares). The average size of state forests across all 55 counties is 1,503.14 acres (608.30 hectares).

Table 5. *State Forests in West Virginia**

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Greenbrier	Calvin Price State Forest	319.26	129.20	2,278.08
	Greenbrier State Forest	5,310.00	2,148.88	
Kanawha	Kanawha State Forest	9,250.00	3,743.34	3,743.34
Mercer	Camp Creek State Forest	5,987.00	2,422.85	2,422.85
McDowell	Panther State Forest	10,640.00	4,305.86	4,305.86
Monongalia	Cooper Rock State Forest	7,539.85	3,051.27	3,051.27
Preston	Cooper Rock State Forest	5,158.15	2,087.43	2,087.43
Pocahontas	Calvin Price State Forest	9,678.20	3,916.63	8,570.51
	Seneca State Forest	11,500.00	4,653.88	
Randolph	Kumbrabow State Forest	9,165.00	3,708.94	3,708.94
Wayne	Cabwaylingo State Forest	8,125.00	3,288.07	3,288.07
Total		82,672.46	33,456.35	33,456.35

Note. Acreage for each state forest is from West Virginia Division of Natural Resources website.

For those state forests that cut cross the border of two counties, GIS was used to estimate their acreage in each county based on information provided by WV GIS Technical Center.

State parks

The state park system, managed as a component of the West Virginia Division of Natural Resources, consists of 36 parks and 2 rail trails. Of the 36 parks, ten are lodge/resort parks. The acreage distribution of state parks by county is presented in Table 6. The state has 36 state parks located in 28 of its 55 counties. Among these 36 state parks, Watoga State Park is the largest with an area of 10,100.00 acres or 4,087.32 hectares. The second largest is Holly River State

Park (8,294.00 acres or 3,356.46hectares). Several counties (i.e., Mercer, Pocahontas, and Tucker) have three state parks. The average size of state parks is 2,147.40 acres (869.39 hectares), ranging from 4.00 acres (1.62 hectares) for Mason to 10,543.00 acres (4,266.59 hectares) for Pocahontas.

Table 6. *Distribution of State Parks by County in West Virginia*

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Barbour	Audra State Park	355.00	143.66	143.66
Cabell	Beech Fork State Park	1,136.91	460.09	357.72
Fayette	Babcock State Park	4,127.00	1,670.14	1,819.87
	Hawks Nest State Park	370.00	149.73	
Gilmer	Cedar Creek State Park	2,588.00	1,047.33	1,047.33
Greenbrier	Beartown State Park	110.00	44.52	44.52
Hancock	Tomlinson Run State Park	1,396.00	565.75	564.94
Hardy	Lost River State Park	3,712.00	1,502.19	1,502.19
Harrison	Waters Smith Memorial State Park	532.00	215.29	215.29
Lewis	Stonewall Jackson Lake State Park	1,736.00	702.53	702.53
Logan	Chief Logan State Park	3,988.00	1,613.89	1,613.89
Marion	Prickett's Fork State Park	188.00	76.09	338.83
	Valley Fall State Park	649.24	262.74	

(Table continues)

Table 6. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Mason	Tu-Endi-Wei State Park	4.00	1.62	1.62
Mercer	Camp Creek State Park	550.00	222.58	589.20
	Pinnacle Rock State Park	374.00	151.35	
	Pipestem Resort State Park	531.89	215.27	
Monroe	Moncove Lake State Park	896.00	361.79	362.60
Morgan	Berkeley Springs State Park	7.00	2.83	2,477.48
	Cacapon Resort State Park	6,115.00	2,474.65	
Nicholas	Carnifex Ferry Battlefield State Park	156.00	63.13	63.13
Pocahontas	Cass Scenic Railroad State Park	156.00	63.13	4,266.59
	Droop Mountain Battlefield State Park	287.00	116.14	
	Watoga State Park	10,100.0	4,087.32	
Preston	Cathedral State Park	132.00	53.42	53.93
	Fairfax Stone State Park	1.26	0.51	
Raleigh	Little Beaver State Park	562.00	227.43	227.43
Ritchie	North Bend State Park	2,459.00	995.12	995.12
Summers	Bluestone State Park	2,154.00	871.69	2,295.42
	Pipestem Resort State Park	3,518.11	1,423.73	
Taylor	Tygart Lake State Park	2,134.00	865.60	1,065.86
	Valley Fall State Park	494.85	200.26	

(Table continues)

Table 6. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Tucker	Blackwater Fall State Park	2,358.00	954.25	3,504.88
	Canaan Valley Resort State Park	6,300.00	2,549.52	
	Fairfax Stone State Park	2.74	1.11	
Wayne	Beech Fork State Park	2,722.88	1,101.91	1,101.91
Webster	Holly River State Park	8,294.00	3,356.46	3,356.46
Wood	Blennerhassett Island Historical State	511	206.79	206.79
	Park			
Wyoming	Twin Falls Resort State Park	3,776	1,528.09	1,528.09
Total		75,484.88	30,549.65	30,549.65

Note. Acreage for each state park is from West Virginia Division of Natural Resources website (http://www.wvstateparks.com/recreation/WVSP_facilities_grid.PDF, retrieved November 11, 2008). For those state parks that cut across the borders of two counties, GIS was used to estimate their acreage in each county based on information provided by WV GIS Technical Center.

Wildlife Management Areas

Table 7 shows the information about WMAs of West Virginia. According to West Virginia Division of Natural Resources website, there are 82 WMAs totally that are located in 50 counties, representing 91.00% of counties in the state. Among these WMAs, there are 10 within the Monongahela National Forest; two in the George Washington National Forest; one within the Jefferson National Forest. Excluding these 13 WMAs that are also parts of national forests, the total acreage of the remaining WMAs is 144,769.51 hectares.

Table 7. *Distribution of Wildlife Management Areas by County in West Virginia*

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Barbour	Pleasant Creek WMA	1,333.53	539.66	595.10
	Teter Creek Lake WMA	137.00	55.44	
Berkeley	Sleepy Creek WMA	16,834.60	6,812.72	6,812.72
Boone	Fork Creek WMA	7,000.00	2,832.80	2,832.80
Braxton	Burnsville Lake WMA	12,579.00	5,090.54	12,465.94
	Elk River WMA	18,225.01	7,375.40	
Brooke	Castlemans Run Lake WMA	380.94	154.16	1,004.00
	Cross Creek WMA	2,081.00	842.15	
	Buffalo Creak Island ³	19.00	7.69	
Cabell	Beech Fork Lake WMA	348.79	141.15	1,171.18
	Green Bottom WMA	1,075.25	435.14	
	Mill Creek WMA	1,470.01	594.89	
Calhoun	Stumptown WMA	502.19	203.23	203.23
Clay	Morris Creek WMA	7,405.01	2,996.70	4,870.28
	Wallback WMA	4,629.72	1,873.58	
Doddridge	-	0.00	0.00	0.00
Fayette	Beury Mountain WMA	3,060.99	1,238.74	2,534.14
	Plum Orchard Lake WMA	3,201.00	1,295.40	
Gilmer	Stumptown WMA	1,171.80	474.21	474.21
Grant	Potomac WMA ¹	21,528.41	8,712.24	0.00
Greenbrier	Meadow River WMA	2,373.99	960.72	960.72
	Cranberry WMA ¹	46,400.44	18,777.59	
	Neola WMA ¹	82,474.51	33,376.25	
Hampshire	Edwards Run WMA	397.00	160.66	
	Fort Mill Ridge WMA	217.01	87.82	7,349.51
	Nathaniel Mountain WMA	8,875.01	3,591.59	
	Short Mountain WMA	8,005.00	3,239.51	
	South Branch WMA	667.01	269.93	
	Wardensville WMA ²	4,716.99	1,908.9	

(Table continues)

Table 7. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Hancock	Hillcreast WMA	2,211.99	895.16	895.16
Hardy	South Branch WMA	429.99	174.01	174.01
	Wardensville WMA ²	50,553.31	20,458.2	
Harrison	Center Branch WMA	973.99	394.16	394.16
Jackson	Woodrum WMA	1,700.01	687.97	2,026.23
	Frozen Camp WMA	2,735.01	1,106.82	
	O'Brien Lake WMA	217.01	87.82	
	Rollins Lakes WMA	79.99	32.37	
	Turkey Run WMA	27.01	10.93	
	Buffington Island ⁴	247.90	100.32	
Jefferson	Shannondale Springs WMA	1,361.01	550.78	550.78
Kanawha	Wallback WMA	2,472.19	1,000.46	1,999.63
	Morris Creek WMA	2,469.00	999.17	
Lewis	Smoke Camp WMA	252.00	101.98	8,518.37
	Stonecoal Lake WMA	2,508.34	1,015.09	
	Stonewall Jackson Lake WMA	18,289.01	7,401.30	
Lincoln	Big Ugly WMA	6,421.01	2,598.49	3,292.12
	Hilbert WMA	288.99	116.95	
	Upper Mud River WMA	1,425.01	576.68	
Logan	-	0.00	0.00	0.00
Marion	-	0.00	0.00	0.00
Marshall	Burches Run Lake WMA	55.01	22.26	1,157.96
	Cecil H. Underwood WMA	2,072.00	838.51	
	Dunkard WMA	469.99	190.20	
	Captina Island ⁴	78.40	31.72	
	Captina Mainland ⁴	138.00	55.85	
	Fish Creek Island ⁴	48.00	19.42	
Mason	Green Bottom WMA	20.76	8.40	6,320.89
	Chief Cornstalk WMA	11,772.00	4,763.96	
	McClintic WMA	3,655.01	1,479.13	

(Table continues)

Table 7. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
	Letart Island ⁴	171.50	69.40	
McDowell	Anawalt Lake WMA	1,792.01	725.20	8,943.55
	Berwind Lake WMA	18,000.00	7,284.34	
	Tug Fork WMA	2,307.99	934.01	
Mineral	Allegheny WMA	5,690.00	2,302.66	2,302.66
Mingo	R.D.Bailey Lake WMA	3,901.82	1,579.01	6,780.84
	Laurel Lake WMA	12,854.00	5,201.83	
Monongalia	Little Indian Creek WMA	1,035.99	419.25	1,538.61
	Snake Hill WMA	2,000.00	809.37	
	Pedlar WMA	766.00	309.99	
Monroe	Bluestone Lake WMA	402.21	162.77	476.7
	Moncove Lake WMA	775.00	313.63	
	Potts Creek WMA ³	18,526.01	7,497.21	
Morgan	Sleepy Creek WMA	6,093.40	2,465.91	2,636.69
	Widmeyer WMA	422.01	170.78	
Nicholas	Summersville Lake WMA	5,973.99	2,417.59	2,417.59
	Cranberry WMA ¹	25,544.47	10,337.48	
Ohio	Bear Rock Lakes WMA	241.99	97.93	151.90
	Castlemans Run Lake WMA	103.36	41.83	
	Wheeling Island ⁴	47.80	19.34	
Pendleton	Thorn Creek WMA	527.99	213.67	213.67
	Shenandoah WMA ²	49,105.99	19,872.49	
	Potomac WMA ¹	75,024.13	30,361.19	
Pleasants	Middle Island ⁴	326.0	131.93	232.68
	Grape/Bat Island ⁴	114.50	46.34	
	Broadback island ⁴	129.60	54.45	
Pocahontas	Handley WMA	783.99	317.27	327.38
	Slatyfork WMA	24.98	10.11	
	Cranberry WMA ¹	32,034.99	12,964.10	
	Little River WMA ¹	124,482.99	50,376.48	

(Table continues)

Table 7. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Preston	Neola WMA ¹	15,453.25	6,253.71	
	Rimel WMA ¹	67,250.99	27,215.51	
	Tea Creek WMA ¹	49,577.49	20,063.30	
	Briery Mountain WMA	1,161.99	470.24	934.82
	Snake Hill WMA	1,092.01	441.92	
	Upper Deckers Creek WMA	55.99	22.66	
Putnam	Blackwater WMA ¹	5,069.29	2,051.47	
	Amherst/Plymouth WMA	7,061.01	2,857.49	2,857.49
Raleigh	-	0.00	0.00	0.00
Randolph	Becky Creek WMA	1,929.99	781.04	1,904.04
	Huttonsville State Farm WMA	2,719.99	1,100.74	
	Slatyfork WMA	23.99	9.71	
	Valley Bend WMA	31.01	12.55	
	Beaver Dam WMA ¹	37,674.01	15,246.13	
	Cheat WMA ¹	80,770.99	32,686.86	
	Otter Creek WMA ¹	44,378.40	17,959.30	
	Potomac WMA ¹	28,514.87	11,539.56	
	Tea Creek WMA ¹	16,558.66	6,701.05	
	Hughes River WMA	2,428.55	982.80	2,083.08
Ritchie	Ritchie Mines WMA	2,300.01	930.78	
	Sand Hill WMA	418.84	169.50	
	Wallback WMA	4,634.98	1,875.71	1,875.71
Roane	Bluestone Lake WMA	17,486.02	7,076.34	7,076.34
Summers	Pleasant Creek WMA	1,696.48	686.54	1,400.41
	Pruntytown State Farm WMA	1,764.01	713.87	
Taylor	Blackwater WMA ¹	53,907.35	21,815.53	6,169.43
	Otter Creek WMA ¹	24,401.36	9,874.88	
	Potomac WMA ¹	14,715.89	5,955.31	

(Table continues)

Table 7. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Tyler	Canaan Valley National Wildlife Refuge ⁵	15,245.00	6,169.43	1,377.31
	Conaway Run Lake WMA	630.00	254.95	
	The Jug WMA	2,065.01	835.68	
	Buffalo Run WMA	143.00	57.87	
	Crab Island ⁴	7.80	3.16	
	Grandview Island ⁴	93.70	37.92	
	Wells Island ⁴	124.40	50.34	
	Williamson Island and Witten Towhead Island ⁴	261.70	105.91	
	Mill Creek Island ⁴	77.80	31.48	
Upshur	Stonecoal Lake WMA	491.64	198.96	198.96
Wayne	Beech Fork Lake WMA	4,654.65	1,883.67	11,162.30
	East Lynn Lake WMA	22,927.99	9,278.63	
Webster	Big Ditch WMA	388.00	157.02	157.02
	Cranberry WMA ¹	54,161.94	21,918.56	
	Tea Creek WMA ¹	1,775.82	718.65	
Wetzel	Cecil H. Underwood WMA	143.00	57.87	5,746.01
	Lantz Farm and Nature Preserve	540.00	218.53	
	Lewis Wetzel WMA	13,388.00	5,417.93	
	Paden Island ⁴	127.7	51.68	
Wirt	Hughes River WMA	7,541.21	3,051.82	3,051.82
Wood	Sand Hill WMA	369.42	149.50	461.35
	Neal Island ⁴	225.60	91.30	
	Muskingum Island ⁴	260.30	105.34	
	Buckley Island ⁴	235.70	95.38	
	Buckley Mainland ⁴	49.00	19.83	

(Table continues)

Table 7. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Wyoming	R.D.Bailey Lake WMA	13,375.79	5,412.99	5,432.41
	Horse Creek WMA	47.99	19.42	
Total		1,381,704.47	559,155.96	144,769.51 ⁶

Note. ¹ These wildlife management areas are located in the Monongahela National Forest. In order to avoid double counting, all these wildlife management areas will be considered as national forest areas. ² These two wildlife management areas are within the George Washington National Forest boundary. ³ This area is located in the Jefferson National Forest. ⁴ Ohio River ⁵ Canaan Valley ⁶ Wildlife management areas within the three national forests are excluded.

Byways/trails

West Virginia is wild and wonderful and can be experienced by traveling on any of the 25 byways and backways (WV Division of Natural Resources, 2008) and numerous local trails. Those 25 major scenic roads include six national byways (i.e., Coal Heritage Trail, Highland Scenic Highway, All-American Historic National Road, Midland Trail, Staunton-Parkersburg Turnpike, and Washington Heritage Trail), nine state byways (Little Kanawha Byway, Midland Trail West, Lower Greenbrier River, Coal Heritage Trail in McDowell, Old Route 7, Farm Heritage Road, Cheat River, Northwestern Turnpike, Mountain Parkway), and 10 state backways (Rich Mountain, Cheat Mountain, Back Mountain, Camp Allegheny, Cedar Creek Road, Williams River, Mountain's Shadow Trail, Wolf Creek, Lowell, and Mountain Park backway) (Figure 5). These roads provide a unique and picturesque glimpse into the Mountain State's history and natural beauty.

Figure 5. Major byways and backways in West Virginia (Source: WVDNR)

Figure 6. Mountain Park byway and Mountain Park backway (Source: WVDNR)

Midland Trail state byway

Midland Trail National Scenic Byway

Figure 7. Midland Trail (Source: WVDNR)

National byways

West Virginia has six national byways: Coal Heritage Trail (97.6 miles / 157.0 km), Highland Scenic Highway (43.0 miles / 69.2 km), Historic National Road (15.7 miles / 25.3 km), Midland Trail (116.8 miles / 188.0 km), Staunton-Parkersburg Turnpike (180.0 miles / 289.7 km), and Washington Heritage Trail (136.7 miles / 220.0 km). Including the Chesapeake & Ohio Canal National Historical Park and Appalachian National Scenic Trail (measured in length as discussed earlier) and the All American Discovery Trail, which is nationally designated trail, though not a national byway, the total length of scenic byways/highways at the national level is 915.18 miles (1,446.44 kilometers) (Table 8). Morgan has the longest length of byways among all 55 counties (102.73 miles / 165.69 km), followed by Fayette (81.92 miles / 132.13 km), Jefferson (51.74 miles / 108.09 km). Jefferson County has four types of byways / highways at the national level: Washington Heritage Trail, Staunton-Parkersburg Turnpike, Chesapeake & Ohio Canal National Historical Park, and Appalachian National Scenic Trail (Table 8).

Table 8. *Distribution of National Byways by County in West Virginia*

County	Trail name	Length		Total length (km)
		mi	km	
Barbour	All American Discovery Trail	31.60	52.77	52.77
Berkeley	Washington Heritage Trail	38.30	61.77	91.40
	Chesapeake & Ohio Canal National Historical Park	18.37	29.63*	
Fayette	Midland Trail	61.03	98.44	132.13
	Coal Heritage Trail	20.89	33.69	
Gilmer	Staunton-Parkersburg Turnpike	16.16	26.07	26.07
Grant	All American Discovery Trail	26.37	44.04	44.04
Greenbrier	Highland Scenic Highway	10.06	16.22	50.30
	Midland Trail	21.13	34.08	
Hampshire	Chesapeake & Ohio Canal National Historical Park	11.05	17.78	29.19
	All American Discovery Trail	6.83	11.41	
Harrison	All American Discovery Trail	16.38	27.35	27.35
Jefferson	Washington Heritage Trail	41.18	66.42	
	Staunton-Parkersburg Turnpike	0.56	0.90	108.09
	Chesapeake & Ohio Canal National Historical Park	10.00	16.10*	
	Appalachian National Scenic Trail	15.33	24.67*	
Kanawha	Midland Trail	35.39	57.08	57.08
Lewis	Staunton-Parkersburg Turnpike	29.53	47.63	47.63
McDowell	Coal Heritage Trail	22.47	36.24	36.24
Mercer	Coal Heritage Trail	7.63	12.30	12.30
Mineral	Chesapeake & Ohio Canal National Historical Park	11.96	19.25	70.44

(Table continues)

Table 8. (continued)

County	Trail name	Length		Total length (km)
		mi	km	
	All American Discovery Trail	30.65	51.19	
Monroe	Appalachian National Scenic Trail	13.76	22.19*	22.19*
Morgan	Washington Heritage Trail	56.92	91.81	165.69
	Chesapeake & Ohio Canal National Historical Park	45.81	73.88*	
Nicholas	Highland Scenic Highway	5.48	8.84	8.84
Ohio	Historical national road	15.69	25.30	25.30
Pocahontas	Highland Scenic Highway	29.12	46.97	81.17
	Staunton-Parkersburg Turnpike	21.20	34.20	
Raleigh	Coal Heritage Trail	20.63	33.27	33.27
Randolph	Staunton-Parkersburg Turnpike	43.82	70.68	77.01
	All American Discovery Trail	3.79	6.33	
Ritchie	Staunton-Parkersburg Turnpike	30.93	49.88	49.93
	All American Discovery Trail	0.03	0.05	
Taylor	All American Discovery Trail	24.49	40.90	40.90
Tucker	All American Discovery Trail	51.07	85.29	85.29
Upshur	Staunton-Parkersburg Turnpike	14.40	23.22	23.22
Wirt	Staunton-Parkersburg Turnpike	7.21	11.63	11.63
Wood	Staunton-Parkersburg Turnpike	16.70	26.94	27.34
	All American Discovery Trail	0.24	0.40	
Wyoming	Coal Heritage Trail	26.60	42.90	42.90
Total		915.18	1,446.44	1,446.44

Note. Chesapeake & Ohio Canal National Historical Park and Appalachian National Scenic Trail are treated as national byways due to the reason explained earlier. In addition, All American Discovery Trail is also grouped into this category for the similar reason. Byway length for each county is estimated using GIS and map measurement. Errors due to GIS estimation are corrected

and adjusted by reference to the actual length for each byway. This information is retrieved November 2, 2008 from: <http://www.byways.org/explore/states/WV/>.

State byways

As stated earlier, there are nine state byways in West Virginia. Among them, Little Kanawha Byway is the longest one with a total length of about 80.00 miles (128.00 km) and passes through four counties: Braxton, Calhoun, Gilmer, and Wirt. The total estimated length of state byways is 354.63 miles (571.98 km) (Table 9).

Table 9. *Distribution of State Byways by County in West Virginia*

County	Trail name	Length		Total (km)
		mi	km	
Braxton	Little Kanawha Byway	4.09	6.60	6.60
Cabell	Midland Trail (West)	12.40	20.00	20.00
Calhoun	Little Kanawha Byway	18.63	30.05	30.05
Gilmer	Little Kanawha Byway	26.04	42.00	42.00
Greenbrier	Lower Greenbrier River	6.82	11.00	11.00
Harrison	Northwestern Turnpike	5.06	8.16	8.16
Kanawha	Midland Trail (West)	17.36	28	28
McDowell	Coal Heritage Trail	15.64	25.23	25.23
Monongalia	Old Route 7	12.49	20.15	20.15
Monroe	Farm Heritage Road	55.80	90.00	90.00
Preston	Cheat River	14.46	23.33	120.70
	Old Route 7	32.47	52.37	
	Northwestern Turnpike	27.90	45.00	
Putnam	Midland Trail (West)	7.44	12	12

(Table continues)

Table 9. (continued)

County	Trail name	Length		Total (km)
		mi	km	
Summers	Farm Heritage Road	5.16	8.33	48.33
	Lower Greenbrier River	24.80	40.00	
Taylor	Northwestern Turnpike	20.31	32.76	32.76
Webster	Mountain Parkway	16.96	27.36	27.36
Wirt	Little Kanawha Byway	20.36	32.84	32.84
Wood	Little Kanawha Byway	10.42	16.80	16.80
Total		354.63	571.98	571.98

Note. The length of each byway in each county was estimated based on information from

http://www.wildernet.com/pages/area.cfm?areaID=WV BWY&CU_ID=1 and WV GIS

Technical Center.

State backways

Table 10 shows the mileage distribution of state backways by each county. Seven (i.e., Rich Mountain, Cheat Mountain, Back Mountain, Camp Allegheny, Cedar Creek Road, Williams River, and Mountain's Shadow Trail) are located in the center state while the other three (i.e., Wolf Creek backway, Lowell backway, and Mountain Parkway backway) in the south part of the state. The total length of the 10 backways is estimated to be 203.58 miles (328.36 km).

Table 10. *Distribution of State Backways by County in West Virginia*

County	Trail name	Length		Total (km)
		mi	km	
Braxton	Cedar Creek Road	24.66	39.77	39.77

(Table continues)

Table 10. (continued)

County	Trail name	Length		Total (km)
		mi	km	
Gilmer	Cedar Creek Road	17.84	28.78	28.78
Greenbrier	Wolf Creek	5.18	8.35	8.35
Monroe	Mountain's Shadow Trail	28.94	46.67	80.07
	Wolf Creek	20.71	33.40	
Pocahontas	Back Mountain	2.67	4.30	48.73
	Camp Allegheny	10.54	17.00	
	Williams River	17.01	27.43	
Randolph	Rich Mountain	12.46	20.10	25.40
	Cheat Mountain	3.29	5.30	
Summers	Lowell	8.98	14.48	14.48
Webster	Williams River	19.39		82.78
	Mountain Parkway	31.93	51.50	
Total		203.58	328.36	328.36

Note. The length of Wolf Creek Backway was estimated by digitizing the map available from http://www.wildernet.com/pages/area.cfm?areaID=WVBWY&CU_ID=1 that shows its distribution in Greenbrier and Monroe counties.

Local trails

Table 11 presents the total length of local trails by county. Local trails include day hike, backpacking, interpretive, fitness, mountain bike, equestrian, X-country skiing, ADA, ATV, dirt bike, OHV, rail-trail, and water trails. In other words, local trails are all kinds of trails but the above described ones at the national and state levels. There are three sources of information on local trails: WV GIS Technical Center (2002), West Virginia Department of Transportation's Division of Highways Programs (WV Division of Highways, 2002), and from Bill Robinson,

WV State Trails Coordinator (a full list of trails obtained through personal communication between Peggy Pings and him, October 31, 2009). The distribution of local trails presented in Table 11 was mainly from these three sources through cross verifications. The total length of these trails is 3,723.5 miles (6,005.67 kilometers).

Table 11. *Local Trails by County in West Virginia*

County	Length		County	Length	
	mi	km		mi	km
Barbour	10.60	16.96	Mineral	11.30	18.08
Berkeley	22.05	35.28	Mingo	30.06	48.10
Boone	123.95	198.32	Monongalia	188.80	302.08
Braxton	30.10	48.16	Monroe	29.60	47.36
Brooke	12.36	19.78	Morgan	91.00	145.60
Cabell	82.70	132.23	Nicholas	60.30	96.48
Calhoun	3.80	6.08	Ohio	41.50	66.40
Clay	2.00	3.20	Pendleton	82.80	132.48
Doddridge	26.40	42.24	Pleasants	2.50	4.00
Fayette	99.90	159.84	Pocahontas	594.80	951.68
Gilmer	9.90	15.84	Preston	92.02	147.23
Grant	18.80	30.08	Putnam	14.90	23.84
Greenbrier	191.60	306.56	Raleigh	30.30	48.48
Hampshire	65.90	105.44	Randolph	255.90	409.44
Hancock	10.60	16.96	Ritchie	52.50	84.00
Hardy	75.50	120.80	Roane	4.60	7.36
Harrison	48.00	76.80	Summers	61.97	99.15
Jackson	4.70	7.52	Taylor	7.90	12.64
Jefferson	1.00	1.60	Tucker	325.96	521.54
Kanawha	87.20	139.52	Tyler	2.80	4.48
Lewis	7.50	12.07	Upshur	0.30	0.48
Lincoln	21.60	34.56	Wayne	35.60	56.96
Logan	263.70	421.920	Webster	86.70	138.72

(Table continues)

Table 11. (*continued*)

County	Length		County	Length	
	Miles	Kilometers		Miles	Kilometers
Marion	23.1	37.17	Wetzel	13.05	20.88
Marshall	25.0	40.23	Wirt	0.30	0.48
Mason	7.0	11.26	Wood	71.20	114.75
McDowell	10.6	17.06	Wyoming	132.30	211.68
Mercer	57.6	92.68			

Note. Proposed trails are excluded from this table.

Source: WV GIS Technical Center, WV Division of Highways Program

(http://www.wvdot.com/3_roadways/rp/3d5_trails.htm), and Bill Robinson, State Trails

Coordinator, West Virginia Division of Highways.

Resorts

Golf courses

Information on golf courses is presented in Table 12. As shown, West Virginia has 113 golf courses with 1,611 holes in total. Forty six counties have more than one golf course, representing 83.6% of the 55 counties in the state. Therefore, only nine counties have no golf course in the state. More than half of the golf courses are 18-hole golf courses, and there are two of them, the Oglebay Resort and Conference Center and the Woods Golf Course Pro Shop, are 36-hole golf courses; the rest of them are nine-hole golf courses.

Among these 46 counties, Harrison County has 10 golf courses, ranking the top in terms of both the number of golf courses and the number of total holes, followed by Raleigh County which has seven golf courses.

Table 12. *Distribution of Golf Courses by County in West Virginia*

County	Name	Number of holes	Total
Barbour	Barbour Country Club	9	9
Berkeley	Stonebridge Golf Club	18	63
	Woodbrier Golf Course	9	
	Woods Golf Course Pro Shop	36	
Boone	Riverview Country Club	18	18
Braxton	-	0	0
Brooke	Highland Hills Par 3 Golf	9	45
	Highland Spring Golf Course	18	
	Brooke Hills Park	18	
Cabell	Esquire Golf Course	18	81
	Orchard Hills Golf Course	9	
	Guyan Golf & Country Club	18	
	Spring Valley Country Club	18	
	Riviera Country Club	18	
Calhoun	-	0	0
Clay	-	0	0
Doddridge	-	0	0
Fayette	Hawks Nest State Park Golf Course	9	45
	Bridge Haven Golf Club	18	
	White Oak Country Club	9	
	Hawks Nest State Park Lodge	9	
Gilmer	Glenville Golf Club	9	9
Grant	-	0	0
Greenbrier	Greenbrier Hills Golf Club	9	54
	Oakhurst Links	9	
	Snead Course at The Greenbrier Sporting Club	18	
	Lewisburg Elks Country Club	9	
	Valley View Country Club	9	
Hampshire	Capon Springs Resort Golf Course	9	9
Hancock	Mountaineers Woodview Golf Course	18	63
	Pleasant Hill Golf Club	9	
	Pleasant Valley Country Club	18	
	Williams Country Club	18	

(Table continues)

Table 12. (continued)

County	Name	Number of holes	Total
Hardy	Valley View Golf Course	18	18
Harrison	Hidden Valley Driving Range	9	135
	Lake Floyd Golf Club	9	
	Bridgeport Country Club	18	
	Pete Dye Golf Club	18	
	Bel Meadow Country Club	18	
	Clarksburg Country Club	18	
	Sunny Croft Country Club	9	
	Bel Meadow Country Club	18	
	Salem Country Club	9	
	Hide-a-way Golf Club	9	
Jackson	Greenhills Country Club	18	72
	Raven Pine Golf Course	18	
	Golf Course At Sycamore Creek	18	
	The Sycamore Creek Golf Club	18	
Jefferson	Locust Hills Golf Course	18	54
	Sleepy Hollow Golf & Country Club	18	
	Cress Creek Golf & Country Club	18	
Kanawha	-	0	0
Lewis	Arnold Palmer Signature Course At Stonewall Resort	18 9	27
	Deerfield Golf Course		
Lincoln	-	0	0
Logan	Logan Country Club	9	18
	Triadelphia Country Club	9	
Marion	Apple Valley Country Club	9	45
	Fairmont Field Club	9	
	Green Hills Country Club	18	
	White Day Golf Club	9	
Marshall	Moundsville Country Club	18	36
	Grand Vue Park	18	
Mason	Riverside Golf Course	18	27
	Hidden Valley Country Club	9	
McDowell	Gary Country Club	9	9
Mercer	Bluefield Elks Country Club	9	18
	Princeton Elks Golf Course	9	
Mineral	Mill Creek Country Club	9	18
	Polish Pines Golf Course	9	

(Table continues)

Table 12. (continued)

County	Name	Number of holes	Total
Mingo	Twisted Gun Golf Course	18	36
	Rocky Mountain Golf Course	9	
	Tug Valley Country Club	9	
Monongalia	Dunkard Valley Golf Course	9	90
	Meadow Ponds Golf Course	18	
	Legends At Lakeview	18	
	Mountaineer Golf & Country Club	18	
	Paradise Lake Golf Course	9	
	Pines Country Club	18	
	Fountain Springs Golf Course	18	18
Monroe	Cacapon Resort State Park	18	18
Morgan	Cherry Hill Country Club	9	18
	Nicholas Memorial Golf Course	9	
Nicholas	Crispin Golf Course	18	72
	Wheeling Country Club	18	
	Oglebay	36	
Pendleton	-	0	0
Pleasants	St. Marys Golf Club	9	9
Pocahontas	Pocahontas Country Club	9	27
	Raven Golf Club At Snowshoe Resort	18	
Preston	Preston Country Club	18	36
	Alpine Lake Resort	18	
Putnam	Sleepy Hollow Golf Club	18	27
	Meadowland Golf Course	9	
Raleigh	Beaver Creek Golf Club	18	108
	Grandview Country Club	18	
	Cobb Course At The Glade Springs Resort	18	
	Glade Springs Village Golf Maintenance	18	
	Black Knight Country Club	9	
	Hidden Valley Golf	9	
	Saddlebred Golf Club	18	
	Elks Country Club	18	18
Randolph	North Bend Golf Course	9	9
Ritchie	Roane County Country Club	9	9
Roane	Willowwood Country Club	9	18
	Pipestem Resort State Park	9	
Summers	Tygart Lake Public Golf Course	18	18

(Table continues)

Table 12. (continued)

County	Name	Number of holes	Total
Tucker	Holly Meadows golf course	9	27
	Canaan Valley Golf Course & Resort	18	
Tyler	Sistersville Country Club	9	9
Upshur	Buckhannon Country Club	9	18
	Ev-un Breth Golf Course	9	
Wayne	Sugarwood Golf Club	18	36
	Lavalette Golf Club	18	
Webster	Mountain View Golf Course	18	18
Wetzel	-	0	0
Wirt	Mingo Bottom Golf Course	18	18
Wood	Parkersburg County Club	18	45
	Minibel Golf Course	9	
	Golf Club of West Virginia	18	
Wyoming	Clear Fork Valley Country Club	18	36
	Twin Falls State Park	18	
Total		1,611	

Source: <http://golf-courses.local-data.com/state/west-virginia-wv/57/>

Cabins

Table 13 presents the distribution of cabins for each county. As the table indicates, a total of 661 cabins have been identified in 22 or 40.0% of 55 counties. Most of these counties are located in the south part of West Virginia. Among those 22 counties, Fayette County has the largest number of cabins (i.e., 144 cabins), followed by Summers County (71), Nicholas County (65), and Pocahontas County (61).

Table 13. *Distribution of Cabins by County in West Virginia*

County	Name	Number	Total
Cabell	Beech Fork State Park	6	6
Fayette	ACE adventure center	37	144
	Breeze hill inn cabins & cottages	6	
	Cabins on miller ridge	6	
	Cabins on the gorge	8	
	The conference resort luxury vacation rental	3	
	Country road cabins	20	
	Dogwood ridge farms cabins	2	
	Mill creek luxury cabins, Inc.	8	
	Mountain memories cabins	3	
	New river adventure center	7	
	Opossum creek retreat	10	
	Triple L lodge	1	
	The Woodcrest	7	
	Babcock State Park	26	
Grant	Harman's north fork cottages	17	20
	North mountain vacation rentals	3	
Greenbrier	Greenbrier State Forest	13	13
Hardy	Lost River State Park	26	26
Lewis	Hillbilly Haven Log Cabin Rentals	7	20
	Lakewood Cabins	3	
	Stonewall Resort Cabins	10	
Monongalia	Mountain Creek Cabins	7	14
	Chestnut Ridge Park	7	
McDowell	Fair haven ranch and B&B	7	7
Mercer	Black dog ranch	5	9
	Cabins & vacation rentals	4	
Monroe	Creekside resort	9	26
	Guest cottages of north street antiques	4	
	High meadow farm lodge	5	
	Larew cottage	1	
	Mountain shadow cabin	3	
	Salt sulphur springs guest house	2	
	Sweet spring management company	2	
Morgan	Cacapon Resort State Park	25	25

(Table continues)

Table 13. (continued)

County	Name	Number	Total
Nicholas	A-Frame @ mountain escape chalet	4	65
	A-Frame at wilderness lake chalets	18	
	Carnifex ferry cottages	12	
	Feed box cabin rentals	10	
	Laurel ridge cabins	6	
	Mountain lake campground & cabins	4	
	Summersville lake retreat	3	
	Summersville lakehouse	3	
	Vista gold cabins, cottage & suites	5	
Pocahontas	Cass Scenic Railroad state park	20	61
	Seneca State Forest	7	
	Watoga State Park	34	
Raleigh	Appalachian backcountry expeditions, Inc.	1	37
	Cabin in the woods at green pastures	3	
	The cabins at pinehaven	11	
	Flat top chalet	3	
	Foxwood vacation rentals	16	
	Red roof cabin	3	
Randolph	Kumbrabow State Forest	6	6
Ritchie	North Bend State Park	9	9
Summers	Greenbrier recreation & chalet, Inc.	2	71
	Greenhaven	4	
	Lazy river retreat	1	
	Lick creek valley farm	1	
	New river falls lodge	5	
	Pipetern place	2	
	Sue's summer cottages	2	
	The retreat at pipestem	2	
	Bluestone State Park	26	
	Pipestem Resort State Park	26	
Taylor	Tygart Lake State Park	11	
Tucker	Golden anchor cabins	3	
	Blackwater Falls state park	26	
	Canaan Valley Resort state park	23	
Wayne	Cabwaylingo state forest	14	14
Webster	Holly River State Park	10	10
Wyoming	Appalachina backcountry expeditions, Inc.	1	15
	Twin Falls Resort State Park	14	
Total			661

Ski resorts

There are four ski resorts in the state, although some other destinations also offer cross country skiing opportunities. Since these X-country skiing trails will be counted as local trails, following the practice of the West Virginia Trail Plan Committee (2008), they are not listed here. As shown, a total of 160 downhill trails are identified for these four ski resorts, with Tucker having the most with 73 trails (Table 14).

Table 14. *Distribution of Ski Resorts in West Virginia*

County	Name	Number of trails	Total
Mercer	Winterplace Ski Resort	27	27
Pocahontas	Snowshoe Mountain Ski Resort	60	60
Tucker	Canaan Valley Ski Area	37	73
	Timberline Ski Resort	36	
Total			160

Source: http://skiing.about.com/lr/west_virginia_ski_resortss/52598/2

Campgrounds

Table 15 presents the campground distribution by county. A total of 64 campgrounds are identified for 30 counties. Most of the cabins are located within the counties in the south part of West Virginia, such as Fayette County, Greenbrier County, Pocahontas County, Raleigh County, and Nicholas County.

Table 15. *Distribution of Campgrounds by County in West Virginia*

County	Total	County	Total	County	Total	County	Total
Barbour	1	Hancock	1	Mineral	0	Ritchie	1
Berkeley	1	Hardy	3	Mingo	0	Roane	0
Boone	0	Harrison	0	Monongalia	1	Summers	3
Braxton	2	Jackson	0	Monroe	1	Taylor	0
Brooke	0	Jefferson	0	Morgan	0	Tucker	2
Cabell	1	Kanawha	1	Nicholas	3	Tyler	0
Calhoun	0	Lewis	0	Ohio	0	Upshur	1
Clay	0	Lincoln	0	Pendleton	4	Wayne	1
Doddridge	0	Logan	1	Pleasants	0	Webster	1
Fayette	10	Marion	0	Pocahontas	6	Wetzel	1
Gilmer	1	Marshall	0	Preston	0	Wirt	0
Grant	2	Mason	1	Putnam	0	Wood	0
Greenbrier	3	McDowell	2	Raleigh	4	Wyoming	1
Hampshire	0	Mercer	1	Randolph	3		
Total				64			

Source: <http://www.trails.com/stateactivity.aspx?area=13122>

Water resources

Rivers

Table 16 presents the distribution of major rivers by county. Ohio River, Elk River, Kanawha River, Greenbrier River, Guyandotte River, Monongahela River, and Potomac River are major

rivers in the state. Among these rivers, Elk River is the longest one in the state with a total length of 172 miles.

Table 16. *Distribution of Major Rivers by County in West Virginia*

County	River name	Length		Total length (km)
		mi	km	
Barbour	Tygart Valley	69.76	112.52	127.02
	Buckhannon	8.99	14.50	
Berkeley	Potomac	19.15	30.89	30.89
Boone	Big Coal	34.14	55.07	66.07
	Mud River	6.82	11.00	
Braxton	Elk River	73.47	118.50	164.50
	Little Kanawha	28.52	46.00	
Brooke	Ohio	20.09	32.40	32.40
Cabell	Ohio	25.60	41.29	134.29
	Guyandotte	26.04	42.00	
	Mud River	31.62	51.00	
Calhoun	Little Kanawha	33.85	54.60	54.60
Clay	Elk River	161.68	260.77	260.77
Doddridge	Hughes	8.68	14.00	59.17
	Middle Island	28.01	45.17	
Fayette	New River	44.64	72.00	142.80
	Gauley River	31.00	50.00	
	Kanawha	9.92	16.00	
	Meadow River	2.98	4.80	
Gilmer	Little Kanawha	26.66	43.00	43.00
Grant	Potomac	20.27	32.69	97.61
	Stony	40.25	64.92	

(Table continues)

Table 16. *(continued)*

County	River name	Length		Total length (km)
		mi	km	
Greenbrier	Greenbrier River	62.00	100.00	100.00
Hampshire	Feeds CR (Abernathy run, Johns run, Broad run, Buffalo creak, Big run, etc.)	88.60	142.90	284.96
	Potomac	7.61	12.27	
	Cacapon	37.07	59.79	
	North River	43.40	70.00	
Hancock	Ohio	26.08	42.07	42.07
Hardy	Reeds CR	43.67	70.44	184.44
	Potomac	26.04	42.00	
	Lost River	32.86	53.00	
	North River	11.78	19.00	
Harrison	Tenmile River	27.99	45.14	129.14
	West Fork	45.88	74.00	
Jackson	Ohio	28.52	46.0	46.00
Jefferson	Potomac	12.47	20.12	94.04
	Shenandoah	45.84	73.94	
Kanawha	Pocatalico	30.32	48.91	350.02
	Big Coal	8.06	13.00	
	Coal River	21.57	34.79	
	Elk River	115.70	186.62	
	Kanawha	41.35	66.70	
Lewis	Little Kanawha	4.96	8.00	75.00
	West Fork	41.54	67.00	
Lincoln	Coal River	4.34	7.00	134.57
	Guyanddotte	34.72	56.00	

(Table continues)

Table 16. (continued)

County	River name	Length		Total length (km)
		mi	km	
	Mud River	44.37	71.57	
Logan	Guyanddotte	37.20	60.00	60.00
Marion	Tygart Valley	18.98	30.62	65.47
	West Fork	11.07	17.85	
	Monongahela	10.54	17.00	
Marshall	Ohio	29.69	47.89	109.14
	Fish CR	19.93	32.14	
	Wheeling	18.05	29.11	
Mason	Kanawha River	18.60	30.00	
	Ohio	54.49	87.88	117.88
McDowell	Big Sandy	61.03	98.43	98.43
Mercer	Bluestone River	65.10	105.00	105.00
Mineral	Potomac	85.16	137.35	137.35
Mingo	Big Sandy	68.20	110.00	134.00
	Guyanddotte	14.88	24.00	
Monongalia	Cheat River	10.23	16.50	58.75
	Monongahela	26.20	42.25	
Morgan	Potomac	15.67	25.27	88.15
	Cacapon	38.99	62.88	
Nicholas	Cranberry River	7.44	12.00	139.80
	Gauley River	76.26	123.00	
	Meadow River	2.98	4.80	
Ohio	Ohio	13.68	22.06	37.38
	Wheeling	9.50	15.32	
Pendleton	Potomac	71.29	114.98	114.98

(Table continues)

Table 16. (continued)

County	River name	Length		Total length (km)
		mi	km	
Pleasant	Ohio	23.29	37.56	65.18
	Middle Island	17.12	27.62	
Pocahontas	Cheat River	10.89	17.56	166.36
	Cranberry River	13.02	21.00	
	Elk River	14.14	22.80	
	Gauley River	3.10	5.00	
	Greenbrier River	74.40	120.00	
Preston	Cheat River	80.17	129.30	145.07
	Youghiogheny	9.78	15.77	
Putnam	Pocatalico	10.63	17.14	58.14
	Kanawha River	25.42	41.00	
Raleigh	New River	28.95	46.70	107.57
	Coal River-Marsh Fork	37.74	60.87	
Randolph	Cheat River	146.82	236.80	248.80
	Elk River	7.44	12.00	
Ritchie	Hughes	97.96	158.00	158.00
Roane	Pocatalico	29.92	48.26	48.26
Summer	New River	38.81	62.59	132.59
	Bluestone River	16.74	27.00	
	Summers	26.66	43.00	
Taylor	Tygart Valley	22.21	35.82	35.82
Tucker	Blackwater	35.46	57.20	238.20
	Cheat River	112.22	181.00	
Tyler	Ohio	14.56	23.49	94.23
	Middle Island	43.86	70.74	
Upshur	Buckhannon	37.20	60.00	96.50

(Table continues)

Table 16. (continued)

County	River name	Length		Total length (km)
		mi	km	
Wayne	Little Kanawha	17.36	28.00	
	West Fork	5.27	8.50	
	Bid Sandy	89.90	145.00	145.00
	Cranberry River	14.26	23.00	148.50
Webster	Elk River	43.40	70.00	
	Gauley River	34.41	55.50	
	Ohio	12.57	20.28	20.28
Wetzel	Hughes	8.25	13.30	87.30
Wirt	Little Kanawha	45.88	74.00	
	Ohio	42.71	68.89	97.11
	Little Kanawha	17.50	28.22	
Wood	Guyandotte	42.16	68.00	68.00

Note. For some rivers such as New River which forms the boundary for two counties (i.e., Fayette and Raleigh), its length will be double counted. Thus, the total length for these rivers may not be the actual length that they run through several counties. Also a river's tributaries are also included under the river name (i.e., Gauley River). As a result, the total length of a river is longer than its actual length if such a river has a number of tributaries. Some segments of a river (i.e., Gauley River) were originally digitized not as a line but as a polygon. These segments are measured on screen using GIS.

Lakes

There are 108 lakes distributed in 47 counties throughout West Virginia. In the state, 85.5% of the counties have lakes. Summersville Lake, located in Nicholas County with a size of

1,092.65 hectares, is the largest one in the state. The second largest one is Stonecoal Jackson Lake with an area of 1072.42 hectares in Lewis County (Table 17).

Table 17. *Distribution of Lakes by County in West Virginia*

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Barbour	Mill Creek Lake	8	3.24	17.40
	Teter Creek Lake	35	14.16	
Berkeley	Sleepy Creek Lake	205	82.96	82.96
Boone	-	0	0.00	0.00
Braxton	Burnsville Lake	968	391.74	998.77
	Sutton Lake	1,500	607.03	
Brooke	Castleman Run Lake	22	8.90	8.90
Cabell	Barboursville Lake	17	6.88	7.28
	Underwood Lake	1	0.40	
Calhoun	-	0	0.00	0.00
Clay	-	0	0.00	0.00
Doddridge	-	0	0.00	0.00
Fayette	Boley Lake	18	7.28	190.20
	Hawks Nest Lake	250	101.17	
	Plum Orchard Lake	202	81.75	
Gilmer	Cedar Creek Lake	8	3.24	3.24
Grant	Mount Storm Lake	1,200	485.62	521.23
	New Creek Dam 14	40	16.19	
	South Mill Creek Lake	48	19.42	
Greenbrier	Sherwood Lake	165	66.77	100.36
	Summit Lake	43	17.40	
	Tuckahoe Lake	40	16.19	
Hampshire	Edwards Run Lake	2	0.81	0.81
Hancock	Tomlinson Run Lake	30	12.14	12.14
Hardy	Kimsey Run Lake	60	24.28	51.60

(Table continues)

Table 17. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Harrison	Rock Cliff Lake	17	6.88	
	Upper Cove Run Lake	6.5	2.63	
	Warden Lake	44	17.81	
	Dog Run Lake	15	6.07	8.50
	Lumberport Lake	6	2.43	
Jackson	Elk Fork Lake	278	112.50	336.28
	Frozenscamp Left Fork Lake	16	6.47	
	Frozenscamp Right Fork Lake	24	9.71	
	O'Brien Lake	217	87.82	
	Rollins Lake	41	16.59	
	Turkey Run Lake	15	6.07	
	Woodrum Lake	240	97.12	
	-	0	0.00	0.00
	Anderson Lake	7	2.83	18.62
	Coonskin Park Lake	2.5	1.01	
Lewis	Elk Two Mile (Site 12)	2	0.81	
	Elk Two Mile (Site 13)	3.5	1.42	
	Elk Two Mile (Site 14)	4	1.62	
	Ridenour Lake	27	10.93	
	Stonecoal Lake	550	222.58	1,295.00
Lincoln	Stonecoal Jackson Lake	2,650	1,072.42	
	Upper Mud Lake	307	124.24	124.24
Logan	Chief Logan Lake	7	2.83	8.5
	Rockhouse Lake	14	5.67	
Marion	Big Run Lake	7	2.83	23.07
	Curtisville Lake	30	12.14	
	Flat Run Lake	6	2.43	
	Huey Run Lake	8	3.24	
	Whetstone Lake	6	2.43	
Marshall	Burches Run Lake	16	6.47	44.11

(Table continues)

Table 17. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Mason	Cameron Lake	6	2.43	
	Drunkard Fork Lake	49	19.83	
	Turkey Run Lake	15	6.07	
	Wolf Run Lake	23	9.31	
	Chief Cornstalk Lake	5	2.02	10.92
	Krodel Lake	22	8.90	
McDowell	Anawalt Lake	7	2.83	10.92
	Berwind Lake	20	8.09	
Mercer	James P. Bailey Lake	28	11.33	45.73
	Jimmy Lewis Lake	15	6.07	
	Kee Reservoir	70	28.33	
Mineral	Ft. Ashby Lake	12	4.86	394.17
	Jennings Randolph Lake	952	385.26	
	Larenim Lake	10	4.05	
Mingo	Laurel Lake	29	11.74	11.74
Monongalia	Cheat Lake	1,730	700.11	702.54
	Coopers Rock Lake	6	2.43	
Monreo	Moncove Lake	144	58.27	58.27
Morgan	Cacapon Lake	6	2.43	2.43
Nicholas	Indian Rocks Lake	5	2.02	1,094.67
	Summersville Lake	2,700	1,092.65	
Ohio	Bear Rock Lake	16	6.47	27.51
	Castleman Run Lake	22	8.90	
	Middle wheeling Creek Lake	30	12.14	
Pendleton	Brandywine Lake	6	2.43	12.95
	Brushy Fork Lake	18	7.28	
	Camp Run Lake	8	3.24	
Pleasants	-	0	0.00	0.00
Pocahontas	Buffalo Fork Lake	22	8.90	14.56

(Table continues)

Table 17. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
	Seneca Lake	3	1.21	
	Watoga Lake	11	4.45	
Preston	Newburg Lake	5	2.02	2.02
Putnam	Hurricane WS Res.	12	4.86	4.86
Raleigh	Fitzpatrick Lake	2.5	1.01	129.7
	Little Beaver Lake	18	7.28	
	Stephens Lake	300	121.41	
Randolph	Spruce Knob Lake	23	9.31	21.86
	Tygart River Backwaters	31	12.55	
Ritchie	North Bend Lake	305	12.43	20.52
	Pennsboro WS Reservoir	9	3.64	
	Tracy Lake	11	4.45	
Roane	Charles Fork Lake	70	28.33	41.69
	Miletree Lake	10	4.05	
	Silcott Fork Lake	23	9.31	
Summers	Bluestone Lake	2,040	825.56	832.03
	Pipestem Lake	16	6.47	
Taylor	Doe Run Sub Impoundment	11	4.45	712.65
	Tygart Lake	1,750	708.20	
Tucker	Thomas Park Lake	8	3.24	3.24
Tyler	Conaway Run Lake	30	12.14	12.14
Upshur	Stonecoal Lake	550	222.58	222.58
Wayne	Beech Fork Lake	720	291.37	702.12
	East Lynn Lake	1,005	406.71	
	Lick Creek Lake	5	2.02	
	Millers Fork Lake	5	2.02	
Webster	Big Ditch Lake	55	22.26	22.26
Wetzel	-	0	0.00	0.00
Wirt	-	0	0.00	0.00

(Table continues)

Table 17. (continued)

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Wood	Mountwood Lake	48	19.42	19.42
Wyoming	Horse Creek Lake	12	4.86	259.81
	RD Bailey Lake	630	254.95	
Total		22,848.65	9,246.52	9,246.52

Source: http://www.wvdnr.gov/fishing/public_access.asp

Fishing ponds

Table 18 represents the fishing ponds in West Virginia. According to the table, there are 17 fishing ponds in the state which are distributed in 14 counties. The biggest fishing pond is McClintic Ponds which is 24.69 hectares in Mason County.

Table 18. *Distribution of Fishing Ponds by County in West Virginia*

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Berkeley	Poorhouse Pond	5	2.02	2.02
Braxton	Salt Lick Pond 9	15	6.07	6.07
Clay	Wallback	15	6.07	6.07
Hardy	Parker Hollow	34	13.76	14.57
	Trout Pond	2	0.81	
Kanawha	Kanawha State Forest Pond	1	0.40	0.40
Logan	Logan County Airport Pond	1	0.40	0.40
Mason	McClintic Ponds	61	24.69	24.69
Monongalia	Pedlar Mason	16	6.47	9.91
	Pedlar Dixon	7	2.83	
	Westover Park Pond	1.5	0.61	
Ohio	Wood Pond	5	2.02	2.02

(Table continues)

Table 18. *(continued)*

County	Name	Size		Total (Hectares)
		Acres	Hectares	
Pocahontas	Handley Pond	5	2.02	2.02
Raleigh	Airport Pond	1	0.40	0.40
Ritchie	North Bend State Park Pond	1.5	0.61	0.61
Summers	Mountain Valley	39	15.78	15.78
Upshur	French Creek Pond	2	0.81	0.81

Note. Some fishing ponds are classified as lakes, and they are not included under this category.

Source: <http://www.wvdnr.gov/fishing/fishing.shtm>

Springs

In West Virginia, there are 249 springs totally, and they are all distributed within 16 counties in the east part of the state. Jefferson County and Pendleton County have the most springs, followed by Pocahontas County, Berkeley County, and Randolph County.

Table 19. *Distribution of Springs by County in West Virginia*

County	Number	County	Number
Berkeley	23	Monongalia	3
Grant	9	Monroe	17
Greenbrier	15	Morgan	4
Hampshire	8	Pendleton	39
Hardy	15	Pocahontas	29
Jefferson	42	Preston	2
Mercer	10	Randolph	23
Mineral	4	Tucker	6

Other attractions

Other attractions involve farm land, forest land, pasture/grassland, and wetland in size. Tables below present the calculation of the size for each land cover land based on information provided by WV GIS Technical Center.

Table 20. *Distribution of Forest Areas by County in West Virginia*

County	Total		County	Total	
	Acres	Hectares		Acres	Hectares
Barbour	165,329.17	66,906.4	Mineral	69,887.07	28,282.32
Berkeley	119,953.61	48,543.55	Mingo	102,745.53	41,579.68
Boone	303,974.44	123,014.2	Monongalia	72,465.39	29,325.73
Braxton	294,833.76	119,315.1	Monroe	83,529.09	33,803.05
Brooke	41,699.90	16,875.37	Morgan	50,891.76	20,595.18
Cabell	137,547.99	55,663.75	Nicholas	148,961.25	60,282.53
Calhoun	163,700.17	66,247.17	Ohio	17,617.86	7,129.701
Clay	208,493.07	84,374.23	Pendleton	153,150.12	61,977.71
Doddridge	180,305.36	72,967.05	Pleasants	29,000.43	11,736.07
Fayette	384,897.49	155,762.6	Pocahontas	218,612.52	88,469.43
Gilmer	194,236.54	78,604.81	Preston	132,549.93	53,641.1
Grant	239,788.24	97,038.94	Putnam	71,120.52	28,781.48
Greenbrier	520,020.76	210,445.1	Raleigh	136,792.17	55,357.88
Hampshire	340,383.02	137,748.2	Randolph	242,956.08	98,320.92
Hancock	36,951.88	14,953.91	Ritchie	100,860.48	40,816.82
Hardy	312,897.39	126,625.2	Roane	106,100.64	42,937.44
Harrison	190,765.25	77,200.03	Summers	79,424.19	32,141.86
Jackson	227,619.50	92,114.42	Taylor	33,828.66	13,689.99
Jefferson	45,306.85	18,335.05	Tucker	95,674.14	38,717.99
Kanawha	513,025.49	207,614.2	Tyler	55,602.09	22,501.39
Lewis	200,381.40	81,091.55	Upshur	72,890.82	29,497.89
Lincoln	261,122.78	105,672.7	Wayne	116,282.34	47,057.84
Logan	272,153.54	110,136.7	Webster	138,523.95	56,058.7
Marion	157,957.39	63,923.14	Wetzel	82,719.00	33,475.22
Marshall	144,569.07	58,505.08	Wirt	51,224.49	20,729.83
Mason	188,146.17	76,140.12	Wood	65,957.04	26,691.89
McDowell	329,057.58	133,165	Wyoming	123,855.12	50,122.43
Mercer	218,714.12	88,510.54			

Table 20 summaries the distribution of forest areas in each county. According to the table, Greenbrier County and Kanawha County have the largest forest areas, while Ohio County has the smallest forest area.

Table 21. *Distribution of Farmland Areas by County in West Virginia*

County	Total		County	Total	
	Acres	Hectares		Acres	Hectares
Barbour	11,135.73	4,506.57	Mineral	2,100.25	849.96
Berkeley	5,205.26	2,106.54	Mingo	2,370.23	959.22
Boone	991.64	401.31	Monongalia	3,811.10	1,542.33
Braxton	3,679.66	1,489.14	Monroe	21,816.01	8,828.82
Brooke	372.73	150.84	Morgan	757.02	306.36
Cabell	3,542.23	1,433.52	Nicholas	2,281.50	923.31
Calhoun	1,939.02	784.71	Ohio	255.97	103.59
Clay	1,572.52	636.39	Pendleton	4,430.45	1,792.98
Doddridge	4,855.66	1,965.06	Pleasants	1,241.60	502.47
Fayette	3,484.41	1,410.12	Pocahontas	13,913.83	5,630.85
Gilmer	3,886.49	1,572.84	Preston	13,563.12	5,488.92
Grant	2,838.36	1,148.67	Putnam	5,542.85	2,243.16
Greenbrier	25,132.74	10,171.08	Raleigh	5,875.10	2,377.62
Hampshire	3,670.55	1,485.45	Randolph	8,538.66	3,455.55
Hancock	509.50	206.19	Ritchie	6,361.47	2,574.45
Hardy	6,867.85	2,779.38	Roane	5,154.11	2,085.84
Harrison	6,242.71	2,526.39	Summers	7,122.26	2,882.34
Jackson	7,808.78	3,160.17	Taylor	4,976.20	2,013.84
Jefferson	10,902.45	4,412.16	Tucker	2,470.98	999.99
Kanawha	2,383.80	964.71	Tyler	2,730.95	1,105.20
Lewis	6,814.70	2,757.87	Upshur	11,915.66	4,822.20
Lincoln	2,555.48	1,034.19	Wayne	1,945.25	787.23
Logan	1,538.27	622.53	Webster	2,864.83	1,159.38
Marion	5,144.10	2,081.79	Wetzel	2,058.66	833.13
Marshall	368.95	149.31	Wirt	1,922.34	777.96
Mason	14,556.76	5,891.04	Wood	6,148.86	2,488.41
McDowell	1,988.83	804.87	Wyoming	2,588.84	1,047.69
Mercer	7,319.97	2,962.35			

Table 21 represents the farmland area distribution in the state. Among the 55 counties, Greenbrier County has the largest farmland area which is 25,132.74 acres (10,171.08 hectares), followed by Monroe County.

According to Table 22, Greenbrier County has 86,608.01 acres (35,049.78 hectares) of pasture area, which again has the largest pasture area in the state; Berkeley County and Monroe County are followed.

Table 22. *Distribution of Pasture Areas by County in West Virginia*

County	Total		County	Total	
	Acres	Hectares		Acres	Hectares
Barbour	34,747.33	14,062.05	Mineral	27,250.11	11,027.97
Berkeley	70,774.73	28,642.14	Mingo	2,533.02	1,025.10
Boone	2,940.00	1,189.80	Monongalia	36,916.52	14,939.91
Braxton	25,034.00	10,131.12	Monroe	70,774.06	28,641.87
Brooke	10,310.67	4,172.67	Morgan	17,444.05	7,059.51
Cabell	25,324.88	10,248.84	Nicholas	28,049.83	11,351.61
Calhoun	12,640.65	5,115.60	Ohio	18,087.65	7,319.97
Clay	6,148.86	2,488.41	Pendleton	59,465.31	24,065.28
Doddridge	18,566.01	7,513.56	Pleasants	8,222.87	3,327.75
Fayette	19,701.31	7,973.01	Pocahontas	38,428.32	15,551.73
Gilmer	17,727.60	7,174.26	Preston	63,177.44	25,567.56
Grant	51,084.54	20,673.63	Putnam	32,308.60	13,075.11
Greenbrier	86,608.01	35,049.78	Raleigh	25,545.05	10,337.94
Hampshire	61,366.96	24,834.87	Randolph	36,727.71	14,863.50
Hancock	10,496.81	4,248.00	Ritchie	30,190.55	12,217.95
Hardy	49,352.12	19,972.53	Roane	39,367.26	15,931.71
Harrison	56,628.94	22,917.42	Summers	22,519.66	9,113.58
Jackson	57,105.30	23,110.20	Taylor	19,858.54	8,036.64
Jefferson	72,199.80	29,218.86	Tucker	14,064.39	5,691.78
Kanawha	19,573.43	7,921.26	Tyler	22,936.19	9,282.15
Lewis	34,344.35	13,898.97	Upshur	28,100.31	11,372.04
Lincoln	14,490.27	5,864.13	Wayne	28,412.55	11,498.40
Logan	3,936.53	1,593.09	Webster	5,223.27	2,113.83
Marion	27,529.21	11,140.92	Wetzel	20,799.69	8,417.52
Marshall	45,368.67	18,360.45	Wirt	19,237.62	7,785.36
Mason	68,898.20	27,882.72	Wood	51,010.93	20,643.84
McDowell	1,872.30	757.71	Wyoming	3,931.86	1,591.20
Mercer	31,480.86	12,740.13			

Table 23. *Distribution of Wetland Areas by County in West Virginia*

County	Total		County	Total	
	Acres	Hectares		Acres	Hectares
Barbour	515.50	208.62	Mineral	523.28	211.77
Berkeley	826.18	334.35	Mingo	23.35	9.45
Boone	36.69	14.85	Monongalia	219.28	88.74
Braxton	229.28	92.79	Monroe	356.49	144.27
Brooke	84.95	34.38	Morgan	285.10	115.38
Cabell	297.78	120.51	Nicholas	2,147.62	869.13
Calhoun	26.24	10.62	Ohio	16.01	6.48
Clay	23.80	9.63	Pendleton	255.97	103.59
Doddridge	12.23	4.95	Pleasants	93.40	37.80
Fayette	607.12	245.70	Pocahontas	2,084.91	843.75
Gilmer	11.56	4.68	Preston	2,374.24	960.84
Grant	1,308.10	529.38	Putnam	401.64	162.54
Greenbrier	6,238.26	2,524.59	Raleigh	449.89	182.07
Hampshire	463.68	187.65	Randolph	2,884.18	1,167.21
Hancock	112.31	45.45	Ritchie	82.73	33.48
Hardy	447.67	181.17	Roane	9.79	3.96
Harrison	222.39	90.00	Summers	415.42	168.12
Jackson	126.54	51.21	Taylor	290.44	117.54
Jefferson	1,052.57	425.97	Tucker	9,095.97	3,681.09
Kanawha	231.51	93.69	Tyler	99.19	40.14
Lewis	76.95	31.14	Upshur	305.12	123.48
Lincoln	26.02	10.53	Wayne	100.52	40.68
Logan	18.24	7.38	Webster	290.44	117.54
Marion	176.13	71.28	Wetzel	54.93	22.23
Marshall	178.13	72.09	Wirt	44.48	18.00
Mason	528.84	214.02	Wood	447.23	180.99
McDowell	103.19	41.76	Wyoming	92.29	37.35
Mercer	209.27	84.69			

The total area of wetland in the state is 37,635.04 acres (15230.36 hectares). Most of These areas are distributed in the east part of West Virginia, such as Tucker County, Greenbrier County, Randolph County, Present County, and Pocahontas County. Among these counties, Tucker County has the largest wetland area which is 9,095.97 acres (3,681.09 hectares).

AHP

As mentioned in the methodology section, 26 CVBs in West Virginia were identified in the study. Among these 26 CVBs, 14 were willing to participate and of the 14 participants seven accepted the face-to-face interview. After mailing the package to all of these 14 CVBs and conducting the follow-up reminder call, there are 11 questionnaires mailed back, with a response rate of 78.57%. Eight of them can be used.

Expert Choice is the software used to analysis the data from these questionnaires. The figures below are the results generated from the software.

Parks

The park group includes five attributes: national parks, national forests, state parks, state forests, and wildlife management areas. According to Figure 8a, state parks weighted 0.385 and ranked the top in this category followed by national parks, national forests, state forests, and wildlife management areas. In the synthetic result (Figure 8b), state parks and national parks are the most important among all park elements. Specifically, national parks, national forests, state forests, and WMAs are 0.723, 0.314, 0.283, and 0.278 times as important as state parks.

a. Relative importance of attributes in the park group

Combined instance -- Synthesis with respect to: Parks

b. Importance of other attributes relative to state parks

Figure 8. Relative importance of attributes in the park group

Byways/trails

The second category is “byways” which contains national byways, state byways, state backways, and local trails. In this group, local trails were ranked the top with a weight of 0.449, followed by national byways, state byways, and state backways (Figure 9).

Combined instance -- Synthesis with respect to: Byways
(Goal > Byways)
Overall Inconsistency = .03

a. Relative importance of attributes in the byway/trail group

Combined instance -- Synthesis with respect to: Byways

b. Importance of other attributes relative to local trails

Figure 9. Relative importance of attributes in the byway/trail group

Water Resources

The third category is “water” which includes four attributes: rivers, lakes, springs, and fishing ponds. “Rivers” and “lakes” are more important than other two attributes, with weights being 0.472 and 0.362, respectively. The synthetic result shows that rivers and lakes are more important than fishing ponds and springs (Figure 10).

a. Relative importance of attributes in the water group

b. Importance of other attributes relative to rivers

Figure 10. Relative importance of attributes in the water group

Resort

Golf courses, skiing resorts, cabins, and campgrounds are categorized into the “resorts” group. As the Figure 11a shows, golf courses were ranked the top with weight of 0.365, followed by cabins, ski resorts, and campgrounds. The synthetic results (Figure 11b) indicate that cabins are about 0.669 times as important as golf courses.

a. Relative importance of attributes in the resort group

b. Importance of other attributes relative to golf courses

Figure 11. Relative importance of attributes in the resort group

Other Attractions

The last group is “other attractions”, containing farm land, forest land, wetland, and pasture/grassland. Figure 12a shows that forest land weights 0.468, the highest of all, followed by wetland, pasture/grassland, and farm land. As shown in Figure 12b, wetland, pasture/grassland, and farmland are about 0.426, 0.383, and 0.326 times as important as forest land.

a. Relative importance of attributes in the other attractions group

Combined instance -- Synthesis with respect to: Other attractions

b. Importance of other attraction attributes relative to forest land

Figure 12. Relative importance of attributes in the other attractions group

Figure 13a summarizes the weights or relative importance for all 21 attributes. As indicated, golf courses were the most important as rated by CVB directors for the state with the highest weight of 0.129, followed by rivers, state parks, cabins, and lakes while state backways were rated as the least important with a weight of 0.008.

Figure 13b shows the relative importance of attributes to golf courses. As shown, rivers, state parks, cabins, and lakes are 0.865, 0.753, 0.669, and 0.664 times as important as golf courses.

a. Relative importance of all attributes

Combined instance -- Synthesis with respect to: Goal

b. Relative importance of all others attributes relative to golf courses

Figure 13. Overall relative importance of all attributes

The relative importance of one general category (i.e., the park group) over another (i.e., resort) is presented in Figure 14a, b. As shown, resorts were rated the most important with parks, byways, water, and other attractions being 0.722, 0.408, 0.396, and 0.195 times as important as resorts.

Goal

a. Relative importance of five groups

Goal

b. Importance of all others groups relative to the resorts group

Figure 14. Overall relative importance of all five groups

Index and mapping

Following previous studies, factor analysis was first used to categorize different types of resources into several groups with seven groups being identified. However, it is difficult to assign a meaningful label to each group due to resource types that are conceptually different being grouped together. For example, springs, pasture/grassland and national parks turned out to be in the same group. For this reason, the results of factor analysis won't be used for resource clustering distribution and mapping. Instead, the five general categories described earlier and reviewed by the CVB directors will serve as the grouping unit. Due to the 21 types of resources being different in nature and measurement unit, each resource type will be normalized. These unweighted normalized values will then be summed up for each county. In addition, the relative importance for each resource type obtained from AHP will also be used to achieve weighted sum for all counties.

Parks group: unweighted

The mean of additive unweighted normalized values for all 55 counties is 0.090909 with standard deviation being 0.116152. All 55 counties can then be classified or clustered into four groups, based on the standard deviation method described in the methods section. However, since in this case the mean is less than the standard deviation, which will result in a negative value for level 3 and level 4. To avoid this issue, half standard deviation of 0.058076 will be used, resulting in the following standards for the park group (to be consistent, all following index calculations are based in this half standard deviation approach):

Level 1:	$x \geq 0.5 \text{ standard deviation} + \text{mean}$	$x \geq 0.148985$
Level 2:	$\text{mean} \leq x < 0.5 \text{ standard deviation} + \text{mean}$	$0.090909 \leq x < 0.148985$
Level 3:	$\text{mean} - 0.5 \text{ standard deviation} \leq x < \text{mean}$	$0.032833 \leq x < 0.090909$
Level 4:	$x < \text{mean} - 0.5 \text{ standard deviation}$	$x < 0.032833$

Figure 15. Amenity index map based on additive normalized unweighted values for the park group

Parks group: weighted

The mean of additive weighted normalized values for all 55 counties is 0.018182 with standard deviation being 0.022754. Similarly, all 55 counties can then be classified or clustered into four groups, based on the standard deviation method described above:

Level 1:	$x \geq 0.5 \text{ standard deviation} + \text{mean}$	$x \geq 0.029559$
Level 2:	$\text{mean} \leq x < 0.5 \text{ standard deviation} + \text{mean}$	$0.018182 \leq x < 0.029559$
Level 3:	$\text{mean} - 0.5 \text{ standard deviation} \leq x < \text{mean}$	$0.006805 \leq x < 0.018182$
Level 4:	$x < \text{mean} - 0.5 \text{ standard deviation}$	$x < 0.006805$

Pocahontas is ranked the highest as highlighted for both unweighted and weighted scenarios while Doddridge is ranked the lowest.

West Virginia Outdoor Recreation Resource Amenity Map

Figure 16. Amenity index map based on additive normalized weighted values of the park group

Byways/trails group: unweighted

The mean of additive unweighted normalized values for all 55 counties is 0.072727 with standard deviation being 0.091306. The standards for clustering and classifying all 55 counties in terms of their additive unweighted normalized values across four types of byways/trails are:

- Level 1: $x \geq 0.11838$
- Level 2: $0.072727 \leq x < 0.11838$
- Level 3: $0.027074 \leq x < 0.072727$
- Level 4: $x < 0.027074$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 17. Amenity index map based on additive normalized unweighted values of the byways/trails group

Byways/trails group: weighted

The mean of additive weighted normalized values for all 55 counties is 0.018164 with standard deviation being 0.020031. The standards for clustering and classifying all 55 counties in terms of their additive weighted normalized values across four types of byways/trails are:

- Level 1: $x \geq 0.028180$
- Level 2: $0.018164 \leq x < 0.028180$
- Level 3: $0.0081485 \leq x < 0.018164$
- Level 4: $x < 0.0081485$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 18. Amenity index map based on additive normalized weighted values of the byways/trails group

Resorts group: unweighted

The mean of additive unweighted normalized values for all 55 counties is 0.072727 with standard deviation being 0.118324. The standards for clustering and classifying all 55 counties in terms of their additive unweighted normalized values across four types of resorts are:

- Level 1: $x \geq 0.131889$
- Level 2: $0.072727 \leq x < 0.131889$
- Level 3: $0.013565 \leq x < 0.072727$
- Level 4: $x < 0.013565$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 19. Amenity index map based on additive normalized unweighted values of the resort group

Resorts group: weighted

The mean of additive weighted normalized values for all 55 counties is 0.018182 with standard deviation being 0.026973. The standards for clustering and classifying all 55 counties in terms of their additive weighted normalized values across four types of resorts are:

- Level 1: $x \geq 0.0316685$
- Level 2: $0.018182 \leq x < 0.0316685$
- Level 3: $0.0046955 \leq x < 0.018182$
- Level 4: $x < 0.0046955$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 20. Amenity index map based on additive normalized weighted values of the resort group

Water resources group: unweighted

The mean of additive weighted normalized values for all 55 counties is 0.072727 with standard deviation being 0.076596. The standards for clustering and classifying all 55 counties in terms of their additive unweighted normalized values across four types of water resources are:

- Level 1: $x \geq 0.111025$
- Level 2: $0.072727 \leq x < 0.111025$
- Level 3: $0.034429 \leq x < 0.072727$
- Level 4: $x < 0.034429$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 21. Amenity index map based on additive normalized unweighted values of the water resource group

Water resources group: weighted

The mean of additive weighted normalized values for all 55 counties is 0.018182 with standard deviation being 0.015043. The standards for clustering and classifying all 55 counties in terms of their additive weighted normalized values across four types of water resources are:

- Level 1: $x \geq 0.0257035$
- Level 2: $0.018182 \leq x < 0.0257035$
- Level 3: $0.0106605 \leq x < 0.018182$
- Level 4: $x < 0.0106605$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 22. Amenity index map based on additive normalized weighted values of the water resource group

Other attractions: unweighted

The mean of additive unweighted normalized values for all 55 counties is 0.072727 with standard deviation being 0.059713. The standards for clustering and classifying all 55 counties in terms of their additive unweighted normalized values across four types of other attractions are:

- Level 1: $x \geq 0.102584$
- Level 2: $0.072727 \leq x < 0.102584$
- Level 3: $0.042871 \leq x < 0.072727$
- Level 4: $x < 0.042871$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 23. Amenity index map based on additive normalized unweighted values of the other resource group

Other attractions: weighted

The mean of additive weighted normalized values for all 55 counties is 0.018182 with standard deviation being 0.012721. The standards for clustering and classifying all 55 counties in terms of their additive weighted normalized values across four types of other attractions are:

- Level 1: $x \geq 0.0245425$
- Level 2: $0.018182 \leq x < 0.0245425$
- Level 3: $0.0118215 \leq x < 0.018182$
- Level 4: $x < 0.0118215$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 24. Amenity index map based on additive normalized weighted values of the other resource group

All 21 types of resources: unweighted

The mean of additive unweighted normalized values for all 55 counties is 0.381818 with standard deviation being 0.33685. The standards for clustering and classifying all 55 counties in terms of their additive weighted normalized values across 21 resource types:

- Level 1: $x \geq 0.550243$
- Level 2: $0.381818 \leq x < 0.550243$
- Level 3: $0.213393 \leq x < 0.381818$
- Level 4: $x < 0.213393$

West Virginia Outdoor Recreation Resource Amenity Map

Figure 25. Amenity index map based on additive normalized unweighted values of all 21 resource types

All 21 types of resources: weighted

Based on the relative importance of the five general categories, the mean of additive weighted normalized values for all 55 counties is 0.077327 with standard deviation being 0.078129. The standards for clustering and classifying all 55 counties in terms of their additive weighted normalized values across the five general categories are:

- Level 1: $x \geq 0.116392$
- Level 2: $0.077327 \leq x < 0.116392$
- Level 3: $0.0382625 \leq x < 0.077327$
- Level 4: $x < 0.0382625$

Figure 26. Amenity index map based on additive normalized weighted values of all 21 resource types

Relationship between the amenity index values and travel/tourism related benefits

Based on the “Economic Impact of Travel on West Virginia 2000-2006p Detailed State and County Estimates” prepared by Dean Runyan Associates for the WV Division of Tourism (2007), a map (Figure 27) indicating the distribution of travel/tourism related economic benefits can be created in a similar way and this map can then be visually compared with other amenity maps. The correlation analysis can also be conducted to see if nature based amenity levels are closely related to economic benefits generated from tourism. Table 24 presents the information on amenity values (both unweighted and weighted) and travel/tourism related economic values (year 2005) for all 55 counties.

Table 24. *Tourism Related Economic Benefits Relative to Amenity Index Values and Levels*

NAME	Unweighted total	Amenity level	Weighted total	Amenity level	Economic benefits in 2005 (\$M)	Attractive level
Barbour	0.17704	4	0.02573	4	12.4	3
Berkeley	0.48014	2	0.09735	2	99.4	2
Boone	0.10564	4	0.01635	4	24.3	3
Braxton	0.52039	2	0.09521	2	28.5	3
Brooke	0.05741	4	0.01461	4	14.1	3
Cabell	0.22120	3	0.04483	3	104.1	2
Calhoun	0.09138	4	0.00822	4	5.9	4
Clay	0.17359	4	0.03800	4	6.1	4
Doddridge	0.05888	4	0.00682	4	5.3	4
Fayette	0.73164	1	0.19131	1	53.6	3
Gilmer	0.28721	3	0.03301	4	6.6	4
Grant	0.45171	2	0.09742	2	12.9	3
Greenbrier	0.86420	1	0.14848	1	218.1	1
Hampshire	0.44302	2	0.09033	2	25.4	3
Hancock	0.12329	4	0.03023	4	410.6	1
Hardy	0.73357	1	0.17343	1	18.1	3
Harrison	0.21863	3	0.04643	3	68.3	2
Jackson	0.18515	4	0.03785	4	31.4	3
Jefferson	0.46649	2	0.08655	2	642.2	1

(Table continues)

Table 24. (continued)

NAME	Unweighted total	Amenity level	Weighted total	Amenity level	Economic benefits in 2005 (\$M)	Attractive level
Kanawha	0.38271	2	0.06535	3	427.5	1
Lewis	0.37739	3	0.08151	2	32.0	3
Lincoln	0.09969	4	0.01810	4	13.3	3
Logan	0.19764	4	0.03361	4	44.9	3
Marion	0.10943	4	0.02121	4	51.3	3
Marshall	0.10376	4	0.02002	4	22.0	3
Mason	0.50543	2	0.10742	2	18.2	3
McDowell	0.36347	3	0.07679	3	20.3	3
Mercer	0.45593	2	0.12064	1	84.2	2
Mineral	0.30121	3	0.05807	3	15.9	3
Mingo	0.13072	4	0.02871	4	22.0	3
Monongalia	0.54981	2	0.11952	1	121.7	2
Monroe	0.74059	1	0.08768	2	8.4	4
Morgan	0.41258	2	0.07681	3	28.9	3
Nicholas	0.47700	2	0.11284	2	46.1	3
Ohio	0.11809	4	0.02676	4	362.8	1
Pendleton	0.66309	1	0.15345	1	6.8	4
Pleasants	0.03571	4	0.00665	4	5.4	4
Pocahontas	1.95819	1	0.45430	1	99.2	2
Preston	0.53867	2	0.06501	3	24.9	3
Putnam	0.13261	4	0.02079	4	53.0	3
Raleigh	0.32061	3	0.08645	2	132.5	1
Randolph	0.90285	1	0.16709	1	32.3	3
Ritchie	0.22732	3	0.04142	3	5.1	4
Roane	0.09354	4	0.01429	4	11.0	3
Summers	0.82585	1	0.17750	1	17.2	3
Taylor	0.31680	3	0.05180	3	10.1	3
Tucker	1.26208	1	0.31716	1	39.0	3
Tyler	0.06876	4	0.01195	4	5.0	4
Upshur	0.17311	4	0.03027	4	23.1	3
Wayne	0.42859	2	0.10346	2	28.7	3
Webster	0.60577	1	0.08630	2	7.5	4
Wetzel	0.09816	4	0.02013	4	17.6	3
Wirt	0.14098	4	0.01926	4	1.2	4
Wood	0.19953	4	0.02800	4	94.5	2
Wyoming	0.29175	3	0.06050	3	26.0	3

As shown in the above table and the following map, Jefferson was the number one county with the largest amount of economic revenues from tourism. Jefferson, along with Hancock, Ohio, Kanawha, Raleigh, and Greenbrier, are among the top level of attractiveness measured by tourism related economic revenues. Thus, through a visual comparison, it seems that the attractiveness map is not highly related to other amenity maps. This is further verified by correlation analysis shown in Table 25.

Tourism Related Economic Benefits, West Virginia (2005)

Figure 27. Tourism related economic benefits by county (2005)

Table 25. *Correlation between Amenity Values and Economic Benefits (n = 55)*

	Amenity (unweighted)	Amenity (weighted)	Benefits
Amenity (unweighted)	1		
Amenity (weighted)	.972*	1	
Benefits	.049	.044	1

* $p < .01$.

As shown in the table, both types of amenity values are highly and positively related ($p < .01$), but they are not significantly related to economic benefits albeit the relationship is positive. However, the relationship becomes significant ($p < .05$) when the four counties (i.e., Jefferson, Kanawha, Ohio, and Hancock) with big discrepancies are excluded (Table 26).

Table 26. *Correlation between Amenity Values and Economic Benefits (n = 51)*

	Amenity (unweighted)	Amenity (weighted)	Benefits
Amenity (unweighted)	1		
Amenity (weighted)	.972**	1	
Benefits	.330*	.331*	1

* $p < .05$, ** $p < .01$.

Chapter 5. Discussion

Three aspects will be discussed in this section: spatial distribution of outdoor recreation/nature-based tourism resources; relative importance of one resource type over the other, and relationship between outdoor recreation resources and travel/tourism related economic benefits.

Spatial distribution of outdoor recreation resources

The park group includes national park units, national forests, state forests, state parks, and WMAs. Two national wildlife refuges were treated as WMAs. These park resources are largely located in the central eastern West Virginia centering on the Pocahontas County. This is true for both unweighted and weighted maps. However, it should be noted that both maps are slightly different in terms of distribution levels for some counties. For example, Fayette and Summers are ranked level two using the unweighted method while they are level 1 when relative importance is considered. In contrast, McDowell is among the first tier of amenity by the unweighted method while dropping to the second level by the weighted method. This is because more weights are given to national park units than to other types of resources in the group. Regardless of the methods used, Pocahontas is ranked the highest despite the fact that no national park units are designated there. This can be explained by the fact that the county has the remaining four types of resources and in large number.

A similar distribution patterns appear for byways/trails group, whereas byways/trails are largely concentrated in the eastern side of the state. However, instead of Pocahontas being ranked number one, as is the case when considering park distribution measured by both methods, the Monroe County is ranked the highest by the unweighted method. However, Pocahontas is ranked number one when the relative importance of resources are taken into consideration. This

can be explained by two reasons. First, Monroe County has all four types of byways/trails (i.e., Appalachian National Scenic Trail, Farm Heritage Road, Mountain's Shadow Trail, Wolf Creek, and a number of local trails) while Pocahontas does not have a trail named as a state byway. Thus, the value for state byway for the county is zero. This is why Monroe County was ranked higher than the Pocahontas County when the unweighted method was used. Second, although the value on the category of the state byway is zero, if relative importance was considered, Pocahontas was ranked higher than Monroe due to local trails being 594.80 miles (951.68 km) for Pocahontas, the longest among all counties while only 29.6 miles (47.36 km) for Monroe. It should be noted that local trails were rated the most important among all types of trails by CVB participants with national byways, state byways, and state backways being 0.504, 0.415, and 0.308 times as important as the local trails.

In terms of the resort group which consists of golf courses, cabins, campgrounds, and skiing resorts, rankings of amenity levels across all 55 counties are quite similar. For example, the seven counties (i.e., Tucker, Pocahontas, Nicholas, Fayette, Raleigh, Summers, and Mercer) which are among the first level of amenity by unweighted method are also ranked the same level by weighted method. One possible explanation for this is because these counties have same types of resources and the relative importance of one type over another is not very different. For instance, the weighs among the four types are quite close, and almost the same for cabins (0.244) and skiing resorts (0.233).

Tucker was ranked the highest because it has all four types of resource in relatively large number. For example, it has two ski resorts (i.e., Canaan Valley Ski Area and Timberline Ski Resort) with a total of 73 downhill trails, almost half of the total 160 trails for all counties; two golf courses, 52 cabins, and two campgrounds.

In the case of water resource group consisting of rivers, lakes, fishing ponds, and springs, 13 counties are among the first level group by the unweighted method and 15 by the weighted method. Mason and Summers are ranked the highest by the unweighted method and weighted method, respectively. In this group, rivers (0.472) and lakes (0.376) are relatively more important than fishing ponds (0.100) and springs (0.066) as rated by the CVB directors. As a result, those counties with longer length of rivers and larger area of lakes will be ranked higher by both unweighted and weighted methods. This is why Summers was ranked the highest because three major rivers (i.e., New River, Bluestone River, and Summers River running through it and two major lakes (i.e., Bluestone Lake and Pipestem Lake) are located in the county.

Finally, as regards other attractions which consist of farm land, forest land, pasture/grassland, and wetland and which are important for sightseeing as well as serve as backdrops for other recreational activities, a similar distribution patterns repeat for the two maps created by using both unweighted and weighted methods. Irrespective of methods used, Greenbrier is ranked the highest among all 55 counties because it has larger tracts of all four types of land cover, particularly the forest land for which it has 520,020.67 acres (210,445.10 ha), the largest among all counties. It should be noted that forest land is also ranked the most important (0.468), higher than the other three types of resources.

Relative importance of one resource over another type

While it is understandable that forest land, rivers, golf courses have been ranked the highest in their groups, there are some other interesting findings that deserve to be discussed in this section. First, state parks (0.385), instead of national parks (0.278), were ranked the most important by CVB participants in the park category. This may be due to the fact that West Virginia actually does not have a place named as a national park, although several places in the

state are designated as national park units and managed by the USDI National Park Service. In addition, state parks are in larger number than national park units in the state. Some of these state parks are resort state parks and are very popular among visitors. Second, for the byways/trails group, local trails are ranked the highest among all types. This may be explained by the fact that a well developed network of local trails is essential for both the community wellbeing and local economy.

Relationship between resources and travel/tourism related economic benefits.

Research on amenity and rural development has been aiming to identify natural amenity assets in rural areas; to examine the dynamic relationships between rural amenity and rural development, and to provide information for decision making related to rural areas.

Theoretically, high amenity areas should be related to high levels of economic revenues.

Although such a relationship does exist for the state, it is not statistically significant. However, when those counties are excluded, a significant relationship appears. A further examination of those excluded counties shows that Jefferson, Kanawha, Ohio, and Hancock each have a casino center (i.e., Charles Town Races and Slots in Jefferson, Tri-State Racetrack and Gambling Center in Kanawha, Wheeling Island Racetrack and Gambling Center in Ohio, and Mountaineer Casino, Racetrack & Resort in Hancock). Moreover, Jefferson is close to Washington D.C., Ohio and Hancock are proximate to Pittsburgh, and Kanawha is where the capital city, Charleston, is located. This raises concern over which types of tourism development in the state should be prioritized, nature-based or gambling-oriented.

Chapter 6. Conclusion

Tourism has been playing an increasingly important role in promoting the economic development in West Virginia. Since tourism development is largely dependent upon tourism resources in terms of quantity and quality, an inventory/compilation and an evaluation of major tourism/outdoor resources in the state are necessary. This study is among the first in the state for such efforts.

This study found that most nature-based tourism resources are largely concentrated in the eastern or central eastern West Virginia centering around the Pocahontas County. This is true for both weighted and unweighted calculations. Relatively, nature-based tourism resources are not very abundant toward the west part of the state. Specifically, for both unweighted and weighted calculations across all 21 types of resources, 10 of 55 counties (18.2%) are ranked the highest, though the 10 counties are not exactly the same (only one is different). Similar patterns also appear for amenity evaluation based on the five general categories. This suggests that the tourism resources of all types measured by quantities for each county are generally comparable to the tourism resources measured by quality.

Although nature-based tourism resources measured by quantity and quality are found to be positively related to the travel/tourism related economic benefits, this relationship is significant only when several gambling counties are excluded. That is, natural tourism resources measured in both quantity and quality do not perfectly match with the economic contribution of tourism, particularly for Jefferson, Ohio, Hancock, and Kanawha. Thus, what kind of tourism should be developed and promoted and how tourism should be developed in a balanced manner, particularly for the western West Virginia are questions that need to be answered, not only by the state politicians, but also by researchers and planners.

More efforts need to be put forward in the future to create a more complete and accurate database, not only for nature-based outdoor recreation amenities, but also for the other types of resources such as culture and heritage. The creation of these databases would be very useful when they are related to other aspects of economic and social variables. For example, these databases, once created, can be used to examine the link between amenity and migration, between resource distribution/use and socio-economic groups, etc. Given the nature of such an effort, collaborations among different agencies are needed to update existing databases and to create more accurate and comprehensive databases.

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Appendix A: List of Convention and Visitors Bureaus

COALFIELD CVB

Cleeta Mullins
PO Box 4585
Chapmanville, WV 25508
Phone: 304/855-5521
Fax: (304) 855-5521
Email: cleetam@aol.com
www.coalfieldcvb.org

SOUTHERN WV CVB

Doug Maddy
1406 Harper Road
Beckley, WV 25801
Phone: 304/252-2244
Fax: 304/252-2252
Toll free: 800/847-4898
Email: doug@visitwv.com
www.visitwv.com

PARKERSBURG CVB

Steve Nicely
350 7th St
Parkersburg, WV 26101
Phone: 304/428-1130
Fax: 304/428-8117
Toll free: 800/752-4982
Email: snicely@parkersburgcvb.org
www.greaterparkersburg.com

SOUTH CHARLESTON CVB

Bob Anderson
P O Box 8599
South Charleston, WV 25303
Phone: 304/746-5552
Fax: 304/746-2970
Toll free: 800/238-9488
Email: bobsccvb@yahoo.com
www.charlestoncvb.com

LEWIS COUNTY CVB

Chris Richards
499 US HWY 33 E
Weston, WV 26452-0379
Phone: 304/269-7328
Fax: 304/269-3271
Toll free: 800/296-7329
Email: tour@stonewallcountry.com

www.stonewallcountry.com

TOP of WV CVB

PO Box 98
Weirton, WV 26062
Phone: 304/797-7001
Fax: 304/797-7009
Toll free: 877/723-7714
Email: info@topofwv.com
www.topofwv.com

TUCKER COUNTY CVB

Bill Smith
P O Box 565, William Ave
Davis, WV 26260
Phone: 304/259-5315
Fax: 304/259-4210
Toll free: 800/782-2775
Email: bill@canaanvalley.org
www.canaanvalley.org

NEW RIVER CVB

Sharon Cruikshank
310 Oyler Ave
Oak Hill, WV 25901
Phone: 304/465-5617
Fax: 304/465-5618
Toll free: 800/927-0263
Email: fayette@wvdsi.net
www.newrivercvb.com

POCAHONTAS COUNTY CVB

Mel Hobbs
P O Box 275
Marlinton, WV 24954-0275
Phone: 304/799-4636
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WHEELING CVB

Frank O'Brien
1401 Main St, Heritage Square
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RANDOLPH COUNTY CVB

Brenda Pritt
1035 N. Randolph Avenue
Elkins, WV 26241
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Email: bpritt@randolphcountycvb.com
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CABELL-HUNTINGTON CVB

763 3rd Ave/P O Box 347
Craig Warner
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GREENBRIER COUNTY CVB

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GRANT COUNTY CVB

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Appendix B: Cover Letter

Jing Wang
325 Percival Hall
Recreation, Parks, & Tourism Resources Program
Division of Forestry & Natural Resources
West Virginia University, Morgantown, WV 26506
Tel: (304) 376 0385; E-mail: jwang13@mix.wvu.edu

Dear Sir/Madam

A few days ago, I called you to request your participation in a graduate study project titled “Development of Natural Tourism Resource Index Maps for West Virginia.” Thank you once again for your willingness to be involved in this study.

This project was awarded to my supervisor Dr. Jinyang Deng by the WVU Senate Research Grant. The purpose of this study is to develop an inventory of natural tourism resources at the county level for all 55 counties in the state and then create an index map for 55 counties. In order to reflect both the quality and quantity of tourism resources for the state, a complete inventory of tourism resources (quantity) and a comparison of relative importance of tourism resources (quality) are needed. To this end, I have prepared a list of natural tourism resources for each county and a pairwise comparison of tourism resources based on the Analytic Hierarchy Process (AHP). Please review the list of tourism resources and complete the pairwise comparison evaluation following the instruction and example.

The review of the list of tourism resources and the completion of the pairwise comparison of tourism resources should take about 1 hour to complete. I will talk more about my research with you and learn more about tourism development in the state from you when we meet. Because your participation in this study is voluntary, you may decline to continue or withdraw from this study without any explanation or consequence. If for any reason you do not want to answer a particular question, please leave it blank.

The information you provide will be kept confidential. We won’t release your identity to other participants in this study. Moreover, to ensure confidentiality, personal information will be coded and stored in a computer, to which only the investigators have access. Normally, information is retained for a period of five years post publication, after which it will be destroyed.

Please find the attached list of tourism resources and pairwise comparison evaluation. Please mail back your completed review and evaluation in the enclosed envelope within 10 days or so after you received it. If you have any questions concerning this study, please contact either myself or my advisor by E-mail: jinyang.deng@mail.wvu.edu or by phone (304) 293-2941 Ext. 2462.

We wish to thank you for your time on, and assistance with, this study.
Sincerely,
Jing Wang

Appendix C: Expert Panel Survey Questionnaire

West Virginia University

Recreation, Parks and Tourism Resources Program

Pairwise Comparison of Natural Tourism Resources: An Analytic Hierarchical Process

Expert Panel Survey Questionnaire

Summer 2008

Pairwise Comparison of Natural Tourism Resources: An Analytic Hierarchical Process

Instruction

The purpose of this pairwise comparison of natural tourism resources is to determine the relative importance of different types of natural tourism resources West Virginia. The results of this pairwise comparison evaluation will be used to create natural tourism resource index maps for all 55 counties. Please follow the instruction and example provided to determine the relative importance of tourism attributes based on your experience and expertise. All information collected will be kept confidential. It will take you about 15-30 minutes to complete the evaluation. When you are finished, please mail it back in the self addressed envelope to the investigator. Thank you very much!

Section I: Relative Importance of Natural Tourism Resources

This section requires you to make pairwise comparisons of the relative importance of tourism attributes. Please compare the importance of one attribute over the other based on the following scale adapted from Saaty (1987).

Intensity of Importance	Determination and Explanation
1	Two attributes are equally important
3	One attribute is slightly more important than the other
5	One attribute is moderately important over the other
7	One attribute is very important over the other
9	One attribute is extremely important over the other

For example, the following hypothetical comparison shows the relative importance of attributes when one plans to buy a new car. In this pairwise comparison, price is slightly more important than make (3 is then assigned for the pair comparison of price vs. make), and price is moderately important over style (5 is then assigned for the pair comparison of price vs. style).

	Slightly important	Moderately important	Very important	Extremely important	Equally important	Extremely important	Very important	Moderately important	Slightly important	
Price	3	5	7	9	1	9	7	5	3	Make
Style	3	5	7	9	1	9	7	5	3	Price

Note: the left side is highlighted, if a number is chosen on this side, it means the attribute, i.e., price is more important than the attribute in the right side, i.e., make. Conversely, if a number is chosen on the right side, it means the attribute on this side, i.e., price is more important than the attribute, i.e., style on the left side. Following the above instruction and example, please finish pairwise comparisons listed below by circling a number to indicate relative importance between two attributes. Once again, a number selected from the left side (highlighted) indicates the attribute on the left side is important than the attribute on the right side. The opposite is true when a number is selected from the right side.

Slightly important	Moderately important	Very important	Extremely important	Equally important	Extremely important	Very important	Moderately important	Slightly important
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Category 1: Parks

National parks	3	5	7	9	1	9	7	5	3	National forests
National forests	3	5	7	9	1	9	7	5	3	State forests
State forests	3	5	7	9	1	9	7	5	3	State parks
State parks	3	5	7	9	1	9	7	5	3	National parks
National parks	3	5	7	9	1	9	7	5	3	State forests
State forests	3	5	7	9	1	9	7	5	3	Wildlife mgnt areas
Wildlife mgnt areas	3	5	7	9	1	9	7	5	3	National forests
National forests	3	5	7	9	1	9	7	5	3	State parks
State parks	3	5	7	9	1	9	7	5	3	Wildlife mgnt areas
Wildlife mgnt areas	3	5	7	9	1	9	7	5	3	National parks

Category 2: Byways/trails

National byways	3	5	7	9	1	9	7	5	3	State byways
State byways	3	5	7	9	1	9	7	5	3	State backways
State backways	3	5	7	9	1	9	7	5	3	Local trails
Local trails	3	5	7	9	1	9	7	5	3	National byways
National byways	3	5	7	9	1	9	7	5	3	State backways
State byways	3	5	7	9	1	9	7	5	3	Local trails

Slightly important	Moderately important	Very important	Extremely important	Equally important	Extremely important	Very important	Moderately important	Slightly important
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Category 3: Resorts

Golf courses	3	5	7	9	1	9	7	5	3	Skiing resorts
Skiing resorts	3	5	7	9	1	9	7	5	3	Cabins
Cabins	3	5	7	9	1	9	7	5	3	Campgrounds
Campgrounds	3	5	7	9	1	9	7	5	3	Skiing resorts
Golf courses	3	5	7	9	1	9	7	5	3	Campgrounds
Golf courses	3	5	7	9	1	9	7	5	3	Cabins

Category 4: Water resources

Rivers	3	5	7	9	1	9	7	5	3	Lakes
Lakes	3	5	7	9	1	9	7	5	3	Springs
Springs	3	5	7	9	1	9	7	5	3	Fishing ponds
Fishing ponds	3	5	7	9	1	9	7	5	3	Rivers
Rivers	3	5	7	9	1	9	7	5	3	Springs
Lakes	3	5	7	9	1	9	7	5	3	Finishing ponds

Category 5: Other attractions

Farm land	3	5	7	9	1	9	7	5	3	Forest land
Forest land	3	5	7	9	1	9	7	5	3	Pasture/grassland
Pasture/grassland	3	5	7	9	1	9	7	5	3	Wetland
Wetland	3	5	7	9	1	9	7	5	3	Farm land
Farm land	3	5	7	9	1	9	7	5	3	Pasture/grassland
Forest land	3	5	7	9	1	9	7	5	3	Wetland

Slightly important	Moderately important	Very important	Extremely important	Equally important	Extremely important	Very important	Moderately important	Slightly important
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Broad category comparison

Parks	3	5	7	9	1	9	7	5	3	Byways
Byways	3	5	7	9	1	9	7	5	3	Resorts
Resorts	3	5	7	9	1	9	7	5	3	Water resources
Water resources	3	5	7	9	1	9	7	5	3	Other attractions
Other attractions	3	5	7	9	1	9	7	5	3	Parks
Parks	3	5	7	9	1	9	7	5	3	Water resources
Water resources	3	5	7	9	1	9	7	5	3	Byways
Byways	3	5	7	9	1	9	7	5	3	Other attractions
Other attractions	3	5	7	9	1	9	7	5	3	Resorts
Resorts	3	5	7	9	1	9	7	5	3	Parks

Section II: Relative Importance of Natural Tourism Resource Features

Slightly important	Moderately important	Very important	Extremely important	Equally important	Extremely important	Very important	Moderately important	Slightly important
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Biodiversity	3	5	7	9	1	9	7	5	3	Scientific values
Scientific values	3	5	7	9	1	9	7	5	3	Scenic beauty
Scenic beauty	3	5	7	9	1	9	7	5	3	Resource rarity
Resource rarity	3	5	7	9	1	9	7	5	3	Accessibility

Accessibility	3	5	7	9	1	9	7	5	3	Naturalness
Naturalness	3	5	7	9	1	9	7	5	3	Popularity
Popularity	3	5	7	9	1	9	7	5	3	Accessibility
Accessibility	3	5	7	9	1	9	7	5	3	Biodiversity
Biodiversity	3	5	7	9	1	9	7	5	3	Scenic beauty
Scenic beauty	3	5	7	9	1	9	7	5	3	Popularity
Popularity	3	5	7	9	1	9	7	5	3	Resource rarity
<hr/>										
Resource rarity	3	5	7	9	1	9	7	5	3	Biodiversity
Biodiversity	3	5	7	9	1	9	7	5	3	Naturalness
Naturalness	3	5	7	9	1	9	7	5	3	Scientific values
Scientific values	3	5	7	9	1	9	7	5	3	Popularity
Popularity	3	5	7	9	1	9	7	5	3	Biodiversity
Scientific values	3	5	7	9	1	9	7	5	3	Resource rarity
Scientific values	3	5	7	9	1	9	7	5	3	Accessibility
Accessibility	3	5	7	9	1	9	7	5	3	Scenic beauty
Scenic beauty	3	5	7	9	1	9	7	5	3	Naturalness
Naturalness	3	5	7	9	1	9	7	5	3	Resource rarity

Do you have any comments concerning this study that you would like to add?

Thank you once again for your time and cooperation.

Appendix D: Samples of Natural Tourism Resources

County: Tucker

	Name	Size	Time established	Main attractions	Location	Others
National parks	NA	NA	NA	NA	NA	NA
National forests	Monongahela NF	101,467 acres				
State parks	Canaan Valley Resort SP Blackwater Falls SP Fairfax Stone SP	2456 acres 635 acres 4 acres				
National scenic byways	NA	NA	NA	NA	NA	NA
State or local scenic roads	NA	NA	NA	NA	NA	NA
State forests	NA	NA	NA	NA	NA	NA
Wildlife management areas	NA	NA	NA	NA	NA	NA
Fishing areas	Thomas Park Lake Blackwater River Dry Fork River	8 acres 15 miles 25 miles			U.S. Route 219 Across dam Blackwater fall areas	
Lakes	Thomas Park Lake Alpine Lake	8 acres			Blackwater fall areas U.S. Route 219 cross the dam	
Springs	Devils Run Spring Elklick Run Spring Kent Lambert Spring Lester Flanagan Spring Dr. Wyatt Farm Spring					
Golf courses	Holly Meadows golf course Canaan Valley Golf Course & Resort	27 holes in total			HC 64, Parsons, wv Route 32, Davis	
Resorts	Canaan Valley resort Timberline four seasons resort Blackwater ski touring center White grass ski touring center				HC 70, Davis, wv HC 70, Davis, wv Davis, wv Rt. 1, Davis, wv	

County: Fayette

	Name	Size	Time established	Main attractions	Location	Others
National parks	New River Gorge NR Gauley River NRA	70,000acres				
National forests	NA	NA	NA	NA	NA	NA
State parks	Babcock SP Hawks Nest SP	4,127acres 370acres				
National scenic byways	Midland Trail	180miles	08-1992			
State or local scenic roads	NA	NA	NA	NA	NA	NA
State forests	NA	NA	NA	NA	NA	NA
Wildlife management areas	Beury Mountain WMA Plum Orchard Lake WMA	3,061acres 3,201acres				
Fishing areas	Boley Hawks Nest Plum Orchard	18acres 250acres 202acres				
Lakes	Coal Run Hawk Lake Plum Orchard Lake	202acres				
Springs	NA	NA	NA	NA	NA	NA
Golf courses	Hawks Nest State Park Golf Course Bridge Haven Golf Club White Oak Country Club Hawks Nest State Park Lodge	45 holes in total			US Rte 60, Gauley Bridge Salem Gatewood Rd, Fayetteville Summerlee Rd, Oak Hill Hawks Nest, Ansted	
Resorts	ACE Adventure Center The Confluence Resort				P.O. Box 1168, Oak Hill 1 Summerfield Court, Fayetteville	

County: McDowell

	Name	Size	Time established	Main attractions	Location	Others
National parks	NA	NA	NA	NA	NA	NA
National forests	NA	NA	NA	NA	NA	NA
State parks	NA	NA	NA	NA	NA	NA
National scenic byways	Coal Heritage Trail	97.6miles	1998			
State or local scenic roads	NA	NA	NA	NA	NA	NA
State forests	Panther SF	7,820acres				
Wildlife management areas	Anawalt WMA Berwind Lake WMA Tug Fork WMA	2,097acres 90acres 2,165acres				
Fishing areas	Anawalt Berwind	7acres 20acres				
Lakes	NA	NA	NA	NA	NA	NA
Springs	NA	NA	NA	NA	NA	NA
Golf courses	Gary Country Club	9 holes in total			S Fork Rd, Thorpe	
Resorts	Ashland Resort				HC 76, Box 681, Northfork	

County: Wirt

	Name	Size	Time established	Main attractions	Location	Others
National parks	NA	NA	NA	NA	NA	NA
National forests	NA	NA	NA	NA	NA	NA
State parks	NA	NA	NA	NA	NA	NA
National scenic byways	NA	NA	NA	NA	NA	NA
State or local scenic roads	Little Kanawha Byway	77.63miles	June 1996			
State forests	NA	NA	NA	NA	NA	NA
Wildlife management areas	Hughes River WMA	10,000acres				
Fishing areas	NA	NA	NA	NA	NA	NA
Lakes	NA	NA	NA	NA	NA	NA
Springs	NA	NA	NA	NA	NA	NA
Golf courses	Mingo Bottom Golf Course	18 holes in total			238 Wells Lock Rd, Elizabeth	
Resorts	NA	NA	NA	NA	NA	NA

County: Ohio

	Name	Size	Time established	Main attractions	Location	Others
National parks	NA	NA	NA	NA	NA	NA
National forests	NA	NA	NA	NA	NA	NA
State parks	NA	NA	NA	NA	NA	NA
National scenic byways	Historic National Road	16miles				
State or local scenic roads	NA	NA	NA	NA	NA	NA
State forests	NA	NA	NA	NA	NA	NA
Wildlife management areas	Bear Rock Lakes WMA Castleman Run Lake WMA	242acres 486acres				
Fishing areas	Castleman Run Middle Wheeling Creek Bear Rock Lakes	22acres 30acres 16acres				
Lakes	Pike Island Pool Schenk Lake					
Springs	NA	NA	NA	NA	NA	NA
Golf courses	Crispin Golf Course Wheeling Country Club Oglebay	72 holes in total			Oglebay Drive, Wheeling Bethany Pike Route 88, Wheeling Route 88 North, Wheeling	
Resorts	Oglebay Resort and Conference Center				Rt. 88N, Wheeling	

Appendix E: Distribution of Local Trails by County in West Virginia

County	Trail name	Land Manager	Trail length	
			Mi	Km
Barbour	Alum Cave	Audra State Park	2.70	4.32
	Bartlett Run	Pleasant Creek WMA	1.20	1.92
	Dayton Park Riverfront Walk	Philippi	2.50	4.00
	Office	Pleasant Creek WMA	0.40	0.64
	Rifle Range	Pleasant Creek WMA	0.80	1.28
	Riverside	Audra State Park	2.00	3.20
	Wildlife	Pleasant Creek WMA	1.00	1.60
Subtotal			10.60	16.96
Berkeley	Hedgesville Park	Martinsburg Berkeley County Parks and Recreation	0.50	0.80
	Poor House Farm Park	Martinsburg Berkeley County Parks and Recreation	6.00	9.60
	Tuscarora Creek Linear Park	Martinsburg Berkeley County Parks and Recreation	0.50	0.80
	Yankauer Nature Preserve Trail	Potomac Valley Audabon Society	2.20	3.52
	Tuscarora Trail		12.85	20.56
Subtotal			22.05	35.28
Boone	John Slack Park Walking	Boone County Commission		
	Little Coal River	Hatfield-McCoy Recreational Area	61.00	97.60
	Little Coal River Singletrack	Hatfield-McCoy Recreational Area	4.00	6.40
	Walhonde Water Trail (Coal River)	Coal River Group Inc.	48.00	76.80
	Allegheny Mountain Trail		3.02	4.83
	Allegheny Trail		6.32	10.11
	Boundary Trail		1.61	2.58
Subtotal			123.95	198.32
Braxton	Belknap Hollow	US Army Corps of Engineers - Sutton Lake	1.00	1.60
	Billy Linger	Elk River WMA	2.20	3.52
	Braxton County Middle School Nature	Braxton County Board of Education	0.40	0.64
	Braxton County Nature	Elk Conservation District	1.00	1.60
	Bulltown Battlefield	US Army - Corps of Engineers - Burnsville Lake	0.30	0.48
	Bulltown Historic Overlook	US Army - Corps of Engineers - Burnsville Lake	0.30	0.48
	Canoe River	Elk River WMA	1.80	2.88
	Cherry Tree Hunting	Elk River WMA	1.70	2.72
	Dynamite	Elk River WMA	0.50	0.80
	Gibson	Elk River WMA	0.50	0.80
	Hickory Flats	Elk River WMA	2.40	3.84

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Southside	US Army Corps of Engineers - Sutton Lake	4.00	6.40
	Stony Creek Hunting	Elk River WMA	2.50	4.00
	Tower Falls	Elk River WMA	0.40	0.64
	Weston to Gauley Bridge Turnpike	US Army - Corps of Engineers	10.00	16.00
	Woodell	Elk River WMA	1.10	1.76
Subtotal			30.10	48.16
Brooke	Bethany Trails	Bethany College		
	Brooke Pioneer Rail	Brooke Pioneer Rail Trail Foundation	6.70	10.72
	Follansbee City Park Nature	Follansbee	0.30	0.48
	Panhandle Rail	Weirton Parks and Recreation	4.00	6.40
	Wellsburg Yankee Rail	Wellsburg	1.10	1.76
	Greater Wheeling Rail-Trail		0.26	0.42
Subtotal			12.36	19.78
Cabell	27th Street Park	Greater Huntington Park & Recreation District	0.20	0.32
	Adahi	Tri-State Council, Boy Scouts of America-Camp Arrowhead	18.00	28.80
	Foxfire Nature	Foxfire Resort	1.10	1.76
	Gentle Oak	Huntington Museum of Art	0.20	0.32
	Kanawha Trace	Tri-State Council, Boy Scouts of America-Camp Arrowhead	32.00	51.20
	Ritter & Boulevard Parks	Greater Huntington Park & Recreation District	6.00	9.60
	Rotary Park	Greater Huntington Park & Recreation District	0.50	0.80
	Spicebush	Huntington Museum of Art	0.30	0.48
	Tulip Tree	Huntington Museum of Art	1.00	1.60
	YMCA - Kennedy Outdoor Recreation	Huntington YMCA	1.00	1.60
	Camp Arrowhead Trail System		22.40	35.84
Subtotal			82.70	132.32
Calhoun	Calhoun County Park	Calhoun County Commission	3.50	5.60
	Grantsville Walking	Calhoun County Commission	0.30	0.48
Subtotal			3.80	6.08
Clay	Clay County Park	Clay County Parks	2.00	3.20
Subtotal			2.00	3.20
Doddridge	Allegheny Mountain Trail		5.57	8.91
	Meadow Creek Trail		0.002	0.0032
	North Bend Rail-Trail		20.82	33.31
Subtotal			26.40	42.24
Fayette	Arbuckle Creek Connector	NPS - New River Gorge National River - Thurmond, Minden, Cunard	0.20	0.32
	Brooklyn Mine	NPS - New River Gorge National River - Thurmond, Minden, Cunard	2.00	3.20

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Burnwood Nature	NPS - New River Gorge National River	1.20	1.92
	Church Loop	NPS - New River Gorge National River - Thurmond, Minden, Cunard	0.10	0.16
	Cliffside	Hawks Nest State Park 2	2.00	3.20
	Endless Wall	NPS - New River Gorge National River	2.40	3.84
	Fayette County Park	Fayette County Parks	10.00	16.00
	Fisherman's	Babcock State Park	2.00	3.20
	Fisherman's	Hawks Nest State Park	1.00	1.60
	Glade Creek	NPS - New River Gorge National River - Glade Creek Area	11.00	17.6
	GYSP	Hawks Nest State Park	1.50	2.40
	Hawks Nest Rail	Ansted	1.80	2.88
	Island in the Sky	Babcock State Park	0.50	0.80
	Kates Falls	NPS - New River Gorge National River - Glade Creek Area	0.20	0.32
	Kates Plateau	NPS - New River Gorge National River - Glade Creek Area	5.10	8.16
	Kaymoor	NPS - New River Gorge National River – Kaymoor Area	8.70	13.92
	Kaymoor Miner's	NPS - New River Gorge National River – Kaymoor Area	1.00	1.60
	Lake View	Babcock State Park	1.00	1.60
	Long Point	NPS - New River Gorge National River – Kaymoor Area	1.60	2.56
	Loop	Hawks Nest State Park	0.30	0.48
	Lover's Leap	Hawks Nest State Park	0.30	0.48
	Manns Creek Gorge	Babcock State Park	2.00	3.20
	Mountain Health	Babcock State Park	0.30	0.48
	Narrow Gauge Rail	Babcock State Park	3.50	5.60
	New River Bridge	NPS - New River Gorge National River – Kaymoor Area	1.60	2.56
	Polls Plateau	NPS - New River Gorge National River - Glade Creek Area	4.90	7.84
	Rocky	Babcock State Park	0.50	0.80
	Skyline	Babcock State Park	2.00	3.20
	Southside	NPS - New River Gorge National River - Thurmond, Minden, Cunard	7.00	11.20
	Stone Cliff Trail	NPS - New River Gorge National River - Thurmond, Minden, Cunard	2.70	4.32
	Thurmond - Minden	NPS - New River Gorge National River - Thurmond, Minden, Cunard	3.40	5.44
	Wilderness	Babcock State Park	2.50	4.00
	Mary Draper Ingles Trail		2.63	4.21
	Thurmond to Cunard Rail- Trail		12.97	20.75
Subtotal			99.90	159.84
Gilmer	Fisherman's	Cedar Creek State Park	1.50	2.40

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Grant	Grassy Ridge	Cedar Creek State Park	0.30	0.48
	Nightingale	Cedar Creek State Park	0.50	0.80
	North Boundary	Cedar Creek State Park	1.00	1.60
	Park View	Cedar Creek State Park	1.80	2.88
	Stone Trough	Cedar Creek State Park	2.30	3.68
	Two Run	Cedar Creek State Park	2.50	4.00
	Subtotal		9.90	15.84
	Bear Rocks	MNF - Potomac District - Dolly Sods Area	2.40	3.84
	Landes	MNF - Potomac District – Seneca Rocks National Recreation Area	1.40	2.24
	North Fork Mountain	MNF - Potomac District – Seneca Rocks National Recreation Area	7.20	11.52
	Redman Run	MNF - Potomac District – Seneca Rocks National Recreation Area	1.50	2.40
	South Branch	MNF - Potomac District – Seneca Rocks National Recreation Area	3.50	5.60
	Allegheny Highlands Rail- Trail		0.0003	0.00048
	Big Bend Loop Trail		1.20	1.92
	Blackbird Knob Trail		0.05	0.08
Greenbrier	Landis Trail		1.36	2.18
	Rohrbaugh Trail		0.17	0.27
	Wildlife Trail		0.05	0.08
	Subtotal		18.80	30.08
	Allegheny Mountain	MNF - White Sulphur – Lake Sherwood Recreation Area	9.26	14.82
	Anthony Creek	MNF - White Sulphur - Bluebend Recreation Area	3.80	6.08
	Beaver's Tail	MNF - White Sulphur - Bluebend Recreation Area	0.30	0.48
	Big Run	MNF - Gauley District - Summit Lake Recreation Area	1.00	1.60
	Black Bear	Greenbrier State Forest	2.00	3.20
	Blue Bend Loop Trail	MNF - White Sulphur - Bluebend Recreation Area	5.00	8.00
	Charles Creek	MNF - Gauley District - Summit Lake RecreationArea	1.00	1.60
	Connector	MNF - White Sulphur – Lake Sherwood Recreation Area	1.90	3.04
	Eagle Camp	MNF - Gauley District - Summit Lake Recreation Area	1.00	1.60
	Falls of Hills Creek	MNF - Gauley District - Summit Lake Recreation Area	0.80	1.28
	Fisherman	MNF - Gauley District - Summit Lake Recreation Area	0.48	0.77
	Frosty Gap	MNF - Gauley District - Summit Lake Recreation Area	5.20	8.32
	Greenbrier River Rail	Greenbrier River Trail State Park	32.18	51.488

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Holsapple	Greenbrier State Forest	2.38	3.81
	Kate's Mountain Loop	Greenbrier State Forest	7.80	12.48
	Kennison Mountain	MNF - Gauley District - Summit Lake Recreation Area	11.00	17.60
	L & R	Ronceverte	3.00	4.80
	Lake Sherwood	MNF - White Sulphur – Lake Sherwood Recreation Area	3.70	5.92
	Little Allegheny	MNF - White Sulphur – Lake Sherwood Recreation Area	4.20	6.72
	Mabel Dowdy Nature Meadow Creek	Greenbrier State Forest	1.30	2.08
		MNF - White Sulphur – Lake Sherwood Recreation Area	2.70	4.32
	Meadow Creek Mountain	MNF - White Sulphur – Lake Sherwood Recreation Area	3.50	5.60
	North Bend	MNF - Gauley District - Summit Lake Recreation Area	2.20	3.52
	Old Field	Greenbrier State Forest	1.50	2.40
	Old Roads	Greenbrier State Forest	1.20	1.92
	Pocahontas	MNF - Gauley District - Summit Lake Recreation Area	4.15	6.64
	Rocky Ridge	Greenbrier State Forest	1.28	2.048
	South Boundary	MNF - White Sulphur - Bluebend Recreation Area	4.60	7.36
	South Fork	MNF - Gauley District - Summit Lake Recreation Area	2.00	3.20
	Summit Lake	MNF - Gauley District - Summit Lake Recreation Area	1.70	2.72
	Upper Meadow	MNF - White Sulphur – Lake Sherwood Recreation Area	1.60	2.56
	Virginia	MNF - White Sulphur – Lake Sherwood Recreation Area	0.50	0.80
	WV School of Osteopathic Medicine	WV School of Osteopathic Medicine	0.80	1.28
	YCC Exercise	Greenbrier State Forest	1.00	1.60
	Young's Nature	Greenbrier State Forest	1.80	2.88
	Allegheny Trail		42.80	68.48
	Beaver Tail Braille Trail		0.30	0.48
	Fork Mountain Trail		11.80	18.88
	Middle Mountain Trail		8.88	14.21
Subtotal			191.60	306.56
Hampshire	17	Nathaniel Mountain WMA	2.00	3.20
	Brushy Hollow	GWJNF - Lee District – Hawk Recreation Area	3.00	4.80
	Buffalo Run	Nathaniel Mountain WMA	3.00	4.80
	County Line	GWJNF - Lee District – Hawk Recreation Area	8.60	13.76
	Hawk	GWJNF - Lee District – Hawk Recreation Area	5.20	8.32

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Hancock	Ice Mountain	Nature Conservancy of West Virginia	3.00	4.80
	Mill Run	Nathaniel Mountain WMA	1.20	1.92
	Nathaniel Mountain	Nathaniel Mountain WMA	2.80	4.48
	Road Connector	Nathaniel Mountain WMA	1.00	1.60
	Short Mountain	Short Mountain WMA	15.00	24.00
	Squirrel Gap	GWJNF - Lee District – Hawk Recreation Area	2.20	3.52
	Vances Cove	GWJNF - Lee District – Hawk Recreation Area	6.30	10.08
	Tuscarora Trail		12.60	20.16
	Subtotal		65.90	105.44
	Beech	Tomlinson Run State Park	1.10	1.76
	Big Foot	Tomlinson Run State Park	1.20	1.92
	Fern	Tomlinson Run State Park	0.50	0.80
	Laurel	Tomlinson Run State Park	2.50	4.00
	Maple	Tomlinson Run State Park	1.30	2.08
Hardy	Poe	Tomlinson Run State Park	1.90	3.04
	White Oak	Tomlinson Run State Park	1.50	2.40
	Panhandle Rail-Trail		0.59	0.94
	Subtotal		10.60	16.96
	Arbutus	Lost River State Park	0.80	1.28
	Baker Park	Moorefield	2.50	4.00
	Baker Park Trail System	Hardy County Commission		
	Big Ridge	Lost River State Park	1.00	1.60
	Big Sloss	GWJNF - Lee District – Wolf Gap Recreation Area	0.30	0.48
	Big Sloss Cutoff	GWJNF - Lee District – Wolf Gap Recreation Area	1.30	2.08
	Branch Mountain	Lost River State Park	0.50	0.80
	Chimney Rock	GWJNF - Lee District – Trout Pond Recreation Area	0.80	1.28
	Copse Cove	Lost River State Park	1.80	2.88
	Covey Cove	Lost River State Park	0.50	0.80
	East Ridge	Lost River State Park	2.50	4.00
	Fishermen's	GWJNF - Lee District – Trout Pond Recreation Area	0.40	0.64
	Half Moon	GWJNF - Lee District – Wolf Gap Recreation Area	3.20	5.12
	Half Moon Lookout	GWJNF - Lee District – Wolf Gap Recreation Area	0.80	1.28
	Howard Lick	Lost River State Park	1.30	2.08
	Laurel	Lost River State Park	0.50	0.80
	Lee	Lost River State Park	0.50	0.80
	Light Horse Harry Lee	Lost River State Park	1.30	2.08
	Loblolly	Lost River State Park	0.90	1.44
	Long Mountain	GWJNF - Lee District – Trout Pond Recreation Area	7.80	12.48

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Mill Mountain	GWJNF - Lee District – Wolf Gap Recreation Area	6.00	9.60
	Miller's Rock	Lost River State Park	3.50	5.60
	North Mountain	GWJNF - Lee District – Trout Pond Recreation Area	6.50	10.40
	Peer	GWJNF - Lee District – Wolf Gap Recreation Area	3.20	5.12
	Pond Run	GWJNF - Lee District – Wolf Gap Recreation Area	3.90	6.24
	Razor Ridge	Lost River State Park	1.30	2.08
	Red Fox	Lost River State Park	0.30	0.48
	Rock Cliff	GWJNF - Lee District – Trout Pond Recreation Area	1.00	1.60
	Shingle Mill Lane	Lost River State Park	1.00	1.60
	Staghorn	Lost River State Park	1.00	1.60
	Trout Pond	GWJNF - Lee District – Trout Pond Recreation Area	2.50	4.00
	Virginia View	Lost River State Park	0.60	0.96
	Welton Park	Petersburg	3.00	4.80
	White Oak	Lost River State Park	1.50	2.40
	Wood Thrush	Lost River State Park	0.30	0.48
	Tuscarora Trail		11.16	17.86
Subtotal			75.50	120.80
Harrison	Bridgeport City Park Loop	Bridgeport Parks and Recreation	2.00	3.20
	Burr Smith	Watters Smith Memorial State Park	1.30	2.08
	Clarksburg City Park	Clarksburg Board of Parks Commissioners	1.00	1.60
	Dogwood	Watters Smith Memorial State Park	0.60	0.96
	Harrison County Hike & Bike Rail	Harrison County Parks and Recreation	7.00	11.20
	Harrison County Southern Rail	Harrison County Parks and Recreation	5.00	8.00
	North Bend Rail	North Bend State Park	7.00	11.20
	Nutter Fork Park	Nutter Fork	1.00	1.60
	Rachel Hershey	Watters Smith Memorial State Park	1.20	1.92
	Smith Cemetery	Watters Smith Memorial State Park	0.20	0.32
	Uncle Doc (Proposed)	Watters Smith Memorial State Park	4.90	7.84
	Veterans Memorial Park	Clarksburg Board of Parks Commissioners	1.50	2.40
	West Fork River Rail	Marion County Parks and Recreation	14.00	22.40
	White Oak	Watters Smith Memorial State Park	1.30	2.08
Subtotal			48.00	76.80
Jackson	Cedar Lakes	WV Division of Education	2.00	3.20
	Jackson County Fairgrounds	Jackson County Commission	1.00	1.60
	Nature Trail	Jackson County Commission	0.60	0.96
	Ravenswood Walking	Ravenswood Development Authority	1.10	1.76
Subtotal			4.70	7.52
Jefferson	Morgans Grove Park	Sheperdstown Mens Club	1.00	1.60
Subtotal			1.00	1.60

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Kanawha	#1 Store	Kanawha State Forest	0.26	0.42
	Alligator Rock	Kanawha State Forest	0.57	0.91
	Ballard	Kanawha State Forest	1.09	1.74
	Beech Glen	Kanawha State Forest	1.50	2.40
	Black Bear Mountain Bike	Kanawha State Forest	1.00	1.60
	Carriage	Charleston Parks and Recreation - Sunrise	0.50	0.80
	Cato Park	Charleston Parks and Recreation	0.60	0.96
	CCC Snipe	Kanawha State Forest	0.80	1.28
	Charleston City Parks	Charleston Parks and Recreation	5.00	8.00
	Charleston Riverfront	Charleston Parks and Recreation	3.80	6.08
	Coonskin Fitness Trail	Kanawha County Parks and Recreation	1.00	1.60
	Coonskin Nature Trail	Kanawha County Parks and Recreation	1.50	2.40
	Cougar	Kanawha County Parks and Recreation	1.40	2.24
	Cub	Kanawha County Parks and Recreation	0.40	0.64
	Davis Creek	Kanawha State Forest	2.50	4.00
	Elk River Rail	Kanawha County Parks and Recreation	1.00	1.60
	Fern	Kanawha County Parks and Recreation	0.20	0.32
	Fire Road	Kanawha County Parks and Recreation	0.70	1.12
	Garden Trail of the Five Senses	Charleston Parks and Recreation - Sunrise	0.05	0.08
	Hemlock	Kanawha County Parks and Recreation	0.50	0.80
	Hemlock Falls	Kanawha State Forest	0.80	1.28
	Johnson Hollow	Kanawha State Forest	0.80	1.28
	Lindy	Kanawha State Forest	0.50	0.80
	Logtown	Kanawha State Forest	0.78	1.25
	Mary Ingles	WV Scenic Trails Association	8.80	14.08
	Middle Ridge	Kanawha State Forest	3.00	4.80
	Mossy Rock	Kanawha State Forest	0.70	1.12
	Northgate Business Park	Charleston Parks and Recreation	0.80	1.28
	Oak	Kanawha County Parks and Recreation	0.30	0.48
	Overlook Rock	Kanawha State Forest	1.50	2.40
	Pigeon Roost	Kanawha State Forest	0.80	1.28
	Pine	Kanawha County Parks and Recreation	0.40	0.64
	Pine Ridge Trail to Dunlap Hollow	Kanawha State Forest	1.30	2.08
	Polecat	Kanawha State Forest	1.50	2.40
	Polly	Kanawha State Forest	1.50	2.40
	Rattlesnake	Kanawha State Forest	1.00	1.60
	Ridenour Lake	Ridenour Park - Nitro	1.00	1.60
	Rocky Ridge	Kanawha State Forest	2.00	3.20
	Spotted Salamander	Kanawha State Forest	0.30	0.48
	St. Albans Nature	St. Albans City Park	0.50	0.80
	Teaberry Rock	Kanawha State Forest	1.50	2.40
	Trace Fork Canyon	South Charleston – Little Creek Park	3.50	5.60
	Walhonde Water Trail (Coal River)	Coal River Group Inc.	24.00	38.40

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Lewis	White Hollow	Kanawha State Forest	2.00	3.20
	Wildcat Ridge	Kanawha State Forest	2.00	3.20
	Wine Cellar Nature	Dunbar Parks and Recreation	0.60	0.96
	Boundary Trail		0.55	0.88
	Shelter to Pool		0.24	0.38
	Subtotal		87.20	139.52
	Autumn Laurel Brook	Stonewall Jackson Resort State Park	1.00	1.60
	Friendship	US Army Corps of Engineers – Stonewall Jackson Lake	0.80	1.28
	Hevener Orchard	Stonewall Jackson Resort State Park	3.50	5.60
	Overlook	Stonewall Jackson Resort State Park	0.50	0.80
Lincoln	Weston-Gauley Bridge		1.70	2.72
	Turnpike			
	Subtotal		7.5	12.07
	Boat Launch	Upper Mud WMA	0.50	0.80
	Dog Pool Ridge	Upper Mud WMA	1.20	1.92
	Fitness Trail	Lincoln Primary Care Center	0.30	0.48
	Hamlin Fitness Trail	Lions Club	0.30	0.48
	Harts Fitness Trail	Harts	0.30	0.48
	Mid Lake Ridge System	Upper Mud WMA	7.00	11.20
	Picnic Area	Upper Mud WMA	0.70	1.12
Logan	Walhonde Water Trail (Coal River)	Coal River Group Inc.		
	Tuscarora Trail		1.10	1.76
	Western Maryland Rail-Trail		10.20	16.32
	Subtotal		21.60	34.56
	Backbone	Chief Logan State Park	3.00	4.80
	Browning Fork	Hatfield-McCoy Recreational Area	107.00	171.20
	Browning Fork Singletrack	Hatfield-McCoy Recreational Area	8.00	12.80
	Buffalo	Chief Logan State Park	2.20	3.52
	Cliffside	Chief Logan State Park	1.10	1.76
	Coal Mine	Chief Logan State Park	1.00	1.60
Marion	Dingess Rum	Hatfield-McCoy Recreational Area	92.00	147.20
	Dingess Rum Singletrack	Hatfield-McCoy Recreational Area	14.00	22.40
	Fitness	Chief Logan State Park	1.00	1.60
	Guyandotte Beauty	Chief Logan State Park	1.10	1.76
	Lake Shore	Chief Logan State Park	1.10	1.76
	Shawnee	Chief Logan State Park	0.50	0.80
	Waterfall	Chief Logan State Park	0.80	1.28
	Wild Turkey	Chief Logan State Park	1.30	2.08
	Wilderness	Chief Logan State Park	6.00	9.60
	Woodpecker	Chief Logan State Park	2.30	3.68
Marion	Bear Wallow Trailhead		12.40	19.84
	Rockhouse Trailhead		8.90	14.24
	Subtotal		263.70	421.92
Marion	Deer	Valley Falls State Park	2.10	3.36
	McTrail	Marion County Parks and Recreation	2.50	4.00

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Marshall	North Marion Rail	Mannington Main Street	2.00	3.20
	Red Cardinal	Valley Falls State Park	2.00	3.20
	Rhododendron	Valley Falls State Park	3.20	5.12
	Rocky	Valley Falls State Park	2.00	3.20
	Upper Mon Water	Upper Mon Water Trail Special Interest Group		
	West Fork River Rail	Marion County Parks and Recreation	9.00	14.40
	Wild Turkey	Valley Falls State Park	1.20	1.92
	Woodland	Valley Falls State Park	1.50	2.40
	Mon R/Caperton Rail-Trail		6.60	10.56
	Subtotal		23.10	36.96
Marshall	Cabin Trail	Grand Vue Park – Marshall County	1.80	2.88
	Warrior Trail	Warrior Trail Association	20.80	33.28
	Allegheny Trail		0.04	0.06
	Cheat Lake Rail-Trail		0.30	0.48
	Greater Wheeling Rail-Trail		1.56	2.50
	Mon R/Caperton Rail-Trail		0.50	0.80
Mason	Subtotal		25.00	40.00
	Adahi	Tri-State Council, Boy Scouts of America-Camp Arrowhead	-	-
	Kanawha Trace	Tri-State Council, Boy Scouts of America-Camp Arrowhead	5.80	9.28
McDowell	Nature	WV Farm Museum	1.00	1.60
	Subtotal		6.80	10.88
	Crane Branch	Panther State Forest	0.50	0.80
McDowell	Drift Branch	Panther State Forest	1.50	2.40
	Fishing	US Army Corps of Engineers - R D Bailey Dam	0.50	0.80
	George's Fork	Panther State Forest	0.50	0.80
	Hurricane Branch	Panther State Forest	1.30	2.08
	Justice	US Army Corps of Engineers - R D Bailey Dam	0.80	1.28
	Loop	Panther State Forest	1.50	2.40
	McDowell County	Gary	1.00	1.60
	Salt River	US Army Corps of Engineers - R D Bailey Dam	1.00	1.60
	Twin Rocks	Panther State Forest	1.00	1.60
	White Oak	Panther State Forest	1.00	1.60
Mercer	Subtotal		10.60	16.96
	Acorn Ridge	Pinnacle Rock State Park	2.00	3.20
	Bear Wallow	Camp Creek State Park	5.00	8.00
	Big Pine	Bluestone State Park	1.70	2.72
	Blue Jay Ridge	Camp Creek State Park	1.80	2.88
	Blue Jay Spur	Camp Creek State Park	0.70	1.12
	Boundary	Bluestone State Park	2.00	3.20
	Brush Creek Falls Rail Trail	Nature Conservancy of West Virginia	2.50	4.00
	Cabin	Bluestone State Park	0.40	0.64

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Deer Crossing	Camp Creek State Park	1.20	1.92
	Farley Branch	Camp Creek State Park	1.40	2.24
	Farley Ridge	Camp Creek State Park	2.30	3.68
	Giles, Fayette, Kanawha Turnpike	Bluestone State Park	1.00	1.60
	Glenwood Park Walking	Glenwood Recreational Park	0.60	0.96
	Homestead	Pinnacle Rock State Park	4.00	6.40
	Horse By-Pass	Camp Creek State Park	1.00	1.60
	Lotito City Park	Bluefield	0.80	1.28
	Neely Knob	Camp Creek State Park	2.00	3.20
	Overlook	Bluestone State Park	0.50	0.80
	Piney Ridge	Camp Creek State Park	1.50	2.40
	Pinnacle Rock to Bramwell	Pinnacle Rock State Park	9.00	14.40
	Princeton City Park	Princeton	0.50	0.80
	Rhododendron	Bluestone State Park	0.80	1.28
	Riverview	Bluestone State Park	1.60	2.56
	Turkey Loop	Camp Creek State Park	10.00	16.00
	Turkey Rock	Pinnacle Rock State Park	2.00	3.20
	White Oak	Camp Creek State Park	1.30	2.08
Subtotal			57.60	92.16
Mineral	Barnum Whitewater Area	Mineral County Parks and Recreation	4.20	6.72
	Rail			
	High Timber	US Army Corps of Engineers –Jennings Randolph Lake	0.80	1.28
	Lakeside	US Army Corps of Engineers – Jennings Randolph Lake	0.50	0.80
	Larenim Park	Keyser	4.00	6.40
	Sunset	US Army Corps of Engineers – Jennings Randolph Lake	1.80	2.88
	Swisher Nature Area	Mineral County Chamber of Commerce	-	-
Subtotal			11.30	18.08
Mingo	Buffalo Mountain	Hatfield-McCoy Recreational Area	14.54	23.26
	Buffalo Mountain Singletrack	Hatfield-McCoy Recreational Area	3.00	4.80
	Flood Wall Path	Williamson	1.30	2.08
	Lake Side	Laurel Lake WMA	1.50	2.40
	Catawba Trail		1.74	2.78
	Rockhouse Trailhead		7.10	11.36
	Warrior Trail		0.88	1.41
Subtotal			30.06	48.10
Monongalia	Brown	West Virginia University - Core Arboretum		
	Caperton Rail	Monongahela River Trail Conservancy	8.00	12.80
	Cheat Lake Rail	Allegheny Energy Supply	4.50	7.20
	Circular	West Virginia University - Core Arboretum	3.30	5.28
	Clay Furnace	Coopers Rock State Forest	0.06	0.10
	Clay Run	Coopers Rock State Forest	0.38	0.61

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Cliff	West Virginia University – Core Arboretum	-	-
	Cross Country Ski Advanced	Coopers Rock State Forest	3.00	4.80
	Cross Country Ski Intermediate	Coopers Rock State Forest	2.00	3.20
	Darnell Hollow	Coopers Rock State Forest	4.00	6.40
	Deckers Creek Rail	Monongahela River Trail Conservancy	19.00	30.40
	Glade Run	Coopers Rock State Forest	1.50	2.40
	Goodspeed Highway	Coopers Rock State Forest	2.50	4.00
	Granville Island	West Virginia University – Core Arboretum		
	Interpretive	Chestnut Ridge Regional Park	1.00	1.60
	Johnson Hollow	Coopers Rock State Forest	5.00	8.00
	Ken's Run	Coopers Rock State Forest	4.50	7.20
	Krepps Park	Morgantown Board of Parks and Recreation Commissioners	1.00	1.60
	Lick Run	Coopers Rock State Forest	1.50	2.40
	Mason Dixon Line	Core	3.00	4.80
	Mon River Trail North	Monongahela River Trail Conservancy	6.00	9.60
	Mon River Trail South	Monongahela River Trail Conservancy	17.00	27.20
	Mont Chateau	Coopers Rock State Forest	3.00	4.80
	Nuttall	West Virginia University – Core Arboretum		
	Pompano Run #1	Star City	0.10	0.16
	Pompano Run #2	Star City	0.20	0.32
	Rattlesnake	Coopers Rock State Forest	1.00	1.60
	Raven Rock	Coopers Rock State Forest	2.00	3.20
	Rhododendron	Coopers Rock State Forest	0.86	1.38
	Ridge	Coopers Rock State Forest	2.50	4.00
	Roadside	Coopers Rock State Forest	3.00	4.80
	Rock City	Coopers Rock State Forest	1.20	1.92
	Rumsey	West Virginia University – Core Arboretum		
	Ryan's Nature	West Virginia University Forest	1.70	2.72
	Scott Run	Coopers Rock State Forest	2.50	4.00
	Sheldon	West Virginia University – Core Arboretum		
	Short Hiking	Chestnut Ridge Regional Park	0.80	1.28
	Silver Maple	West Virginia University – Core Arboretum		
	Strausbaugh	West Virginia University – Core Arboretum		
	Taylor	West Virginia University – Core Arboretum		
	Upper Mon Water	Upper Mon Water Trail Special Interest Group	33.00	52.80
	Virgin Hemlock	Coopers Rock State Forest	1.20	1.92

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	West Virginia Botanical Gardens	West Virginia Botanical Garden Inc.		
	White Park	Morgantown Board of Parks and Recreation Commissioners	8.00	12.80
	Whitemoore Park	Morgantown Board of Parks and Recreation Commissioners	2.00	3.20
	Wildlife Plot	Chestnut Ridge Regional Park	1.00	1.60
	Advanced Ski Trail		3.25	5.20
	Catawba Trail		0.80	1.28
	Cheat Lake Rail-Trail		4.88	7.81
	Connector		0.75	1.20
	Intermediate Ski Loop		0.85	1.36
	Iron Furnace Foot Trail		0.55	0.88
	Mon R/Caperton Rail-Trail		26.00	41.60
	Nature Trail		0.42	0.67
Subtotal			188.80	302.08
Monroe	Alexander Park	Union	-	-
	Devils Creek	Moncove Lake State Park	0.50	0.80
	Diamond Hollow	Moncove Lake State Park	1.30	2.08
	Ground Hog	Appalachian Trail Conference – Mid Atlantic Region	1.80	2.88
	Grouse Knoll	Moncove Lake State Park	0.80	1.28
	Middle Mountain	Moncove Lake State Park	1.00	1.60
	Roxalia Springs	Moncove Lake State Park	1.80	2.88
	Allegheny Trail		22.43	35.89
Subtotal			29.60	47.36
Morgan	Blue	Coolfont Resort	1.00	1.60
	Blue-Orange	Coolfont Resort	0.80	1.28
	Blue-Red	Coolfont Resort	0.60	0.96
	Cabin Loop	Cacapon Resort State Park	0.80	1.28
	Central Trail	Cacapon Resort State Park	5.00	8.00
	Green	Coolfont Resort	2.50	4.00
	Green-Orange	Coolfont Resort	1.30	2.08
	Horse	Cacapon Resort State Park	3.00	4.80
	Lake Siri	Coolfont Resort	1.80	2.88
	Laurel Trail	Cacapon Resort State Park	2.00	3.20
	Martha's	Coolfont Resort	0.50	0.80
	Multipurpose	Cacapon Resort State Park	0.30	0.48
	Paw Paw Park	Paw Paw	0.50	0.80
	Piney Ridge	Cacapon Resort State Park	1.00	1.60
	Ridge	Cacapon Resort State Park	1.50	2.40
	Sleepy Creek Trail	Sleepy Creek WMA	35.00	56.00
	Warm Springs Middle School	Eastern Panhandle Conservation District	3.00	4.80
	White	Coolfont Resort	1.80	2.88
	Ziler	Cacapon Resort State Park	7.00	11.20
	Ziler Loop	Cacapon Resort State Park	5.00	8.00
	Tuscarora Trail		16.60	26.56

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Subtotal			91.00	145.60
Nicholas	Cranberry /Tri Rivers Rail	Richwood	16.30	26.08
	Fisherman's	Carnifex Ferry Battlefield State Park	0.60	0.96
	Fork Mountain	MNF - Gauley District - Summit Lake Recreation Area	21.00	33.60
	Forks Spur	MNF-Cranberry	1.00	1.60
	Hiking	US Army Corps of Engineers – Summersville Lake	3.50	5.60
	Long Point	US Army Corps of Engineers – Summersville Lake	1.80	2.88
	Old Carnifex Road	Carnifex Ferry Battlefield State Park	1.50	2.40
	Old Main	Nicholas Old Main Foundation	0.30	0.48
	Patterson	Carnifex Ferry Battlefield State Park	2.00	3.20
	Pierson Hollow	Carnifex Ferry Battlefield State Park	0.80	1.28
	Pratt Park	Richwood	0.30	0.48
	Salmon Run	US Army Corps of Engineers – Summersville Lake	2.00	3.20
	Barrenshe Trail		4.17	6.67
	Cranberry Ridge Trail		2.59	4.14
	Hinkle Branch Trail		1.24	1.98
	Muddlety Trail		1.25	2.00
Subtotal			60.30	96.48
Ohio	Arboretum	Ogleby Park- Wheeling	2.80	4.48
	Discovery	Ogleby Park - Wheeling	0.40	0.64
	Falls Vista	Ogleby Park - Wheeling	0.50	0.80
	Glen Dale to Moundsville Rail	Moundsville	3.40	5.44
	Hardwoods Ridge	Ogleby Park - Wheeling	0.80	1.28
	Wheeling Heritage Rail	Wheeling	12.00	19.20
	Greater Wheeling Rail-Trail		16.90	27.04
	Tuscarora Trail		4.70	7.52
Subtotal			41.50	66.40
Pendleton	Bother Ridge	GWJNF - Dry River District - Brandywine Recreation Area	3.10	4.96
	Corridor	Nelson Rocks Preserve		
	Gracies	Nelson Rocks Preserve		
	High Knob	GWJNF - Dry River District - Brandywine Recreation Area	2.70	4.32
	Miller Run	GWJNF - Dry River District -Brandywine Recreation Area	4.60	7.36
	North Fork Mountain	MNF - Potomac District - Seneca Rocks National Recreation Area		
	Pierson's	Nelson Rocks Preserve		
	Pike Knob	Nature Conservancy of West Virginia	2.50	4.00
	Road Run	GWJNF - Dry River District - Brandywine Recreation Area	1.40	2.24

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Sawmill	GWJNF - Dry River District - Brandywine Recreation Area	3.60	5.76
	Sugar Run	GWJNF - Dry River District - Brandywine Recreation Area	4.50	7.20
	West Side	Nelson Rocks Preserve		
	Allegheny Mountain Trail		10.67	17.07
	Allegheny Trail		10.09	16.14
	Bear Hunter Trail		0.96	1.54
	Big Run Trail		0.00	0.00
	Gatewood Trail		2.64	4.22
	High Meadows Trail		1.97	3.15
	Horton Trail		2.70	4.32
	Huckleberry Trail		4.66	7.46
	Judy Springs Trail		0.72	1.15
	Leading Ridge Trail		0.32	0.51
	Lumberjack Trail		5.67	9.07
	North Prong Trail		0.00	0.00
	Redman Run Trail		0.24	0.38
	Roaring Plains Trail		3.36	5.38
	Seneca Creek Trail		5.19	8.30
	Seneca Rocks Trail		2.27	3.63
	South Branch Trail		3.46	5.54
	South Prong		0.97	1.55
	Spring Ridge Trail		0.02	0.03
	Swallow Rock Trail		1.00	1.60
	Tom Lick Run Trail		1.14	1.82
	Vance Run Trail		1.72	2.75
	Whispering Spruce Trail		0.58	0.93
Subtotal			82.80	132.48
Pleasants	Belmont Elementary School	Belmont Elementary School	0.50	0.80
	Gobblers Knob	Boys and Girls Clubs of Pleasants County	1.50	2.40
	Rock Wall	Boys and Girls Clubs of Pleasants County	0.50	0.80
Subtotal			2.50	4.00
Pocahontas	3D	Snowshoe Mountain Resort - Snowshoe Basin	1.00	1.60
	6000 Steps	Snowshoe Mountain Resort - Snowshoe Basin	1.60	2.56
	Airport Runway C2a	Snowshoe Mountain Resort - Silver Creek	0.90	1.44
	Airport Runway C2b	Snowshoe Mountain Resort - Silver Creek	0.70	1.12
	Ann Bailey	Watoga State Park	3.00	4.80
	Arrowhead	Watoga State Park	1.00	1.60
	Back Run Road	Snowshoe Mountain Resort - Silver Creek	3.00	4.80
	Bail Out	Snowshoe Mountain Resort - Snowshoe Basin	1.10	1.76
	Ball Hammer	Snowshoe Mountain Resort- Western Territory	0.50	0.80

(Table continues)

Appendix E. (*continued*)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Ball N the Jack	Snowshoe Mountain Resort- Western Territory	1.10	1.76
	Bandsaw	Snowshoe Mountain Resort- Western Territory	1.10	1.76
	Bannock Shoals Run	MNF - Marlinton District - Tea Creek Recreation Area	4.80	7.68
	Bar Ford	MNF - Greenbrier District - Little Mountain Area	1.50	2.40
	Bear Pen Ridge	MNF - Marlinton District - Tea Creek Recreation Area	3.50	5.60
	Bear Pin	Snowshoe Mountain Resort- Western Territory	1.80	2.88
	Bearpen	Watoga State Park	3.00	4.80
	Bear's Den	Snowshoe Mountain Resort – Silver Creek	0.20	0.32
	Beartown Boardwalk	Beartown State Park	0.50	0.80
	Beaver	MNF - Marlinton District – Beaver Creek Area	1.40	2.24
	Beaver Creek	MNF - Marlinton District – Beaver Creek Area	0.40	0.64
	Big Beechy	MNF - Gauley District – Cranberry Wilderness Area	5.40	8.64
	Big Mountain Road	Seneca State Forest	1.00	1.60
	Big Run Road	Seneca State Forest	2.00	3.20
	Big Spring	Droop Mountain Battlefield State Park	0.30	0.48
	Birch Log	MNF - Gauley District – Cranberry Wilderness Area	3.00	4.80
	Birdland	Snowshoe Mountain Resort- Western Territory	0.70	1.12
	Black Mountain	MNF - Gauley District – Cranberry Wilderness Area	2.00	3.20
	Black Mountain	MNF - Marlinton District – Highlands Scenic Highway Area	2.40	3.84
	Black Oak	Seneca State Forest	1.00	1.60
	Bobcat	Snowshoe Mountain Resort – Silver Creek	0.20	0.32
	Boundary	MNF - Marlinton District - Tea Creek Recreation Area	3.90	6.24
	Brooks Memorial Arboretum	Watoga State Park		
	Brushy Mountain	MNF - White Sulphur – Middle Mountain Area	2.10	3.36
	Buck and Doe	Watoga State Park	0.80	1.28
	Buck's Run	Snowshoe Mountain Resort – The Plateau	1.10	1.76
	Buffalo Fork Lake	MNF - Greenbrier District – Island Campground Area	1.10	1.76
	Burner Mountain	MNF - Greenbrier District – Middle Mountain Area	3.60	5.76

(*Table continues*)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Burnside Ridge	Watoga State Park	3.00	4.80
	Cheat Mountain Ridge B1a	Snowshoe Mountain Resort - Snowshoe Basin	1.90	3.04
	Cheat Mountain Ridge B1b	Snowshoe Mountain Resort – Snowshoe Basin	1.10	1.76
	Cheat Mountain Ridge B1c	Snowshoe Mountain Resort - Snowshoe Basin	0.90	1.44
	Clover Lick Road	Seneca State Forest	2.00	3.20
	Corduroy Road	Snowshoe Mountain Resort - Silver Creek	1.80	2.88
	County Line	MNF - Gauley District - Cranberry Wilderness Area	11.00	17.60
	Cow Pasture	MNF - Gauley District - Cranberry Glades Botanical Area	5.50	8.80
	Cranberry Bogs	Droop Mountain Battlefield State Park	0.50	0.80
	Cranberry Glades Overlook	MNF - Marlinton District - Highlands Scenic Highway Area	0.30	0.48
	Cranberry Ridge	MNF - Gauley District - Cranberry Wilderness Area	7.00	11.20
	Cranberry Volkswalk	MNF - Gauley District - Cranberry Glades Botanical Area	6.00	9.60
	Crestline	Seneca State Forest	2.00	3.20
	Cross Tie	Snowshoe Mountain Resort- Western Territory	0.50	0.80
	Cupp Cake	Snowshoe Mountain Resort-Western Territory	0.80	1.28
	Cut Off	Snowshoe Mountain Resort - The Plateau	1.80	2.88
	District Line	MNF - Gauley District - Cranberry Wilderness Area	2.80	4.48
	Dock	MNF - White Sulphur - Middle Mountain Area	2.00	3.20
	Doe Run	Snowshoe Mountain Resort - Snowshoe Basin	0.50	0.80
	Drop Out	Snowshoe Mountain Resort - Silver Creek	0.30	0.48
	Durbin Trail	Division of Natural Resources	16.00	25.60
	East Fork	MNF - Greenbrier District - Island Campground Area	8.00	12.80
	East Plateau P6a	Snowshoe Mountain Resort - The Plateau	0.40	0.64
	East Plateau P6b	Snowshoe Mountain Resort - The Plateau	0.40	0.64
	Enchanted Forest	Snowshoe Mountain Resort - Silver Creek	1.10	1.76
	Fire Tower	Snowshoe Mountain Resort – Snowshoe Basin	2.00	3.20
	Fire Tower	Seneca State Forest	0.80	1.28
	Flame Azalea	MNF - Marlinton District – Sugar Camp Area	0.30	0.48
	Forks of Cranberry	MNF - Gauley District - Cranberry Wilderness Area	5.70	9.12

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Gauley Mountain	MNF - Marlinton District - Tea Creek Recreation Area	5.20	8.32
	Gauley Mountain System	Elk River Touring Center	4.50	7.20
	Great Laurel	Seneca State Forest	0.60	0.96
	Greenbrier River Rail	Greenbrier River Trail State Park	42.00	67.20
	Greenhorn	Snowshoe Mountain Resort - The Plateau	0.40	0.64
	Gut Hammer	Snowshoe Mountain Resort- Western Territory	0.50	0.80
	Hawthorn Road	Snowshoe Mountain Resort- Western Territory	1.50	2.40
	Headset Adjustment	Snowshoe Mountain Resort - Silver Creek	0.60	0.96
	High Rock	MNF - Marlinton District - Highlands Scenic Highway Area	1.60	2.56
	Hill Top	Seneca State Forest	1.00	1.60
	Hinkle Run	MNF - Greenbrier District - Middle Mountain Area	3.70	5.92
	Honeycomb Rocks Trail	Monongahela National Forest	0.30	0.48
	Honeymoon	Watoga State Park	2.00	3.20
	Horse Heaven	Droop Mountain Battlefield State Park	0.30	0.48
	Horseshoe	Seneca State Forest	1.00	1.60
	Hosterman	MNF - Greenbrier District - Little Mountain Area	5.20	8.32
	Hut Nature Trail	Snowshoe Mountain Resort - Snowshoe Basin	0.30	0.48
	Jacobs Well Trail	MNF - Marlinton District - Beaver Creek Area		
	Jesse's Cove	Watoga State Park	2.50	4.00
	Johns Camp Run	MNF - Greenbrier District - Shavers Mountain Area	0.80	1.28
	Kennison Run	Watoga State Park	3.50	5.60
	Lake	Snowshoe Mountain Resort – Snowshoe Basin	0.80	1.28
	Lake	Watoga State Park	1.50	2.40
	Lake Connector	Snowshoe Mountain Resort – Snowshoe Basin	0.40	0.64
	Laurel Creek	MNF - Marlinton District – Pocahontas Recreation Area	8.80	14.08
	Laurelly Branch	MNF - Gauley District – Cranberry Wilderness Area	3.40	5.44
	Lick Branch	MNF - Gauley District – Cranberry Wilderness Area	2.10	3.36
	Little Fork	MNF - Gauley District – Cranberry Wilderness Area	3.50	5.60
	Little Mountain	Seneca State Forest	1.00	1.60
	Little Mountain	MNF - Greenbrier District – Little	2.50	4.00

(Table continues)

Appendix E. (*continued*)

County	Trail name	Land Manager	Trail length	
			Mi	Km
		Mountain Area		
	Loop Road	Seneca State Forest	3.00	4.80
	Lower Beaver Dam	Snowshoe Mountain Resort – Silver Creek	1.40	2.24
	Lower Spruce Road	Snowshoe Mountain Resort – Silver Creek	2.10	3.36
	Lynn Knob	MNF - Greenbrier District – Middle Mountain Area	3.90	6.24
	Maintenance Road	Snowshoe Mountain Resort – Silver Creek	1.80	2.88
	McDonald Way	Snowshoe Mountain Resort – Silver Creek	1.10	1.76
	Michael Mountain Road	Seneca State Forest	2.00	3.20
	Middle Fork	MNF - Gauley District – Cranberry Wilderness Area	10.00	16.00
	Middle Mountain	MNF - White Sulphur – Middle Mountain Area	13.00	20.80
	Middle Mountain North	MNF - Marlinton District – Pocahontas Recreation Area	4.60	7.36
	Middle Mountain South	MNF - White Sulphur – Middle Mountain Area	1.30	2.08
	Minnie Ball	Droop Mountain Battlefield State Park	0.50	0.80
	Monongaseneka	Watoga State Park	2.50	4.00
	Musket	Droop Mountain Battlefield State Park	0.50	0.80
	North - South	MNF - Gauley District – Cranberry Wilderness Area	14.00	22.40
	North Boundary	Watoga State Park	2.00	3.20
	North Face	MNF - Marlinton District - Tea Creek Recreation Area	3.10	4.96
	North Fork	MNF - Greenbrier District – North Fork of Deer Creek Area	2.90	4.64
	North Fork	MNF - Gauley District – Cranberry Wilderness Area	6.50	10.40
	Old Soldier	Droop Mountain Battlefield State Park	0.70	1.12
	Out N Back	Snowshoe Mountain Resort – Silver Creek	0.70	1.12
	Overlook	Droop Mountain Battlefield State Park	0.50	0.80
	Peters Mountain	MNF - Greenbrier District – Little Mountain Area	5.50	8.80
	Pine Run	Watoga State Park	0.80	1.28
	Poca Run	MNF - Greenbrier District – Island Campground Area	2.50	4.00
	Point of No Return	Snowshoe Mountain Resort – Silver Creek	0.40	0.64
	Pole Axe	Snowshoe Mountain Resort – Silver Creek	1.40	2.24
	Poo Plateau	Snowshoe Mountain Resort – The Plateau	1.10	1.76
	Powder Puff	Snowshoe Mountain Resort – Snowshoe Basin	1.20	1.92

(*Table continues*)

Appendix E. (*continued*)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Props Run Connector	Pocahontas County Commission		
	Red Run	MNF - Marlinton District - Tea Creek Recreation Area	2.50	4.00
	Red Spruce Knob	MNF - Marlinton District – Highlands Scenic Highway Area	1.20	1.92
	Right Fork Connector	MNF - Marlinton District - Tea Creek Recreation Area	0.60	0.96
	Right Fork of Tea Creek	MNF - Marlinton District - Tea Creek Recreation Area	3.40	5.44
	Rock Garden	Snowshoe Mountain Resort- Western Territory	0.80	1.28
	Rock-N-Roll	Snowshoe Mountain Resort- Western Territory	0.60	0.96
	Rough Run	MNF - Gauley District - Cranberry Wilderness Area	3.00	4.80
	Round About	Snowshoe Mountain Resort - Silver Creek	0.80	1.28
	Ruff N Tumble	Snowshoe Mountain Resort- Western Territory	0.90	1.44
	Saddle Loop	MNF - Marlinton District - Tea Creek Recreation Area	1.70	2.72
	Scarlet Oak	Seneca State Forest	0.50	0.80
	Shavers Fork	MNF - Greenbrier District – North Fork of Deer Creek Area		
	Shaver's Fork	Snowshoe Mountain Resort – Snowshoe Basin	1.80	2.88
	Shavers Lake Road	Snowshoe Mountain Resort – Snowshoe Basin	2.50	4.00
	Shay Way	Snowshoe Mountain Resort – The Plateau	1.20	1.92
	Short N Sweet	Snowshoe Mountain Resort – The Plateau	0.40	0.64
	Sidewinder	Snowshoe Mountain Resort – The Plateau	0.40	0.64
	Slide Run	Snowshoe Mountain Resort – Silver Creek	2.20	3.52
	Smoke Camp	MNF - Greenbrier District – Island Campground Area	1.80	2.88
	South Burnside	Watoga State Park	1.00	1.60
	Span Oak	MNF - Greenbrier District – Middle Mountain Area	3.70	5.92
	Spruce	Pocahontas County Commission	5.00	8.00
	Spruce Knob Lake	WV Rails to Trails Council	3.00	4.80
	Spur	Snowshoe Mountain Resort – The Plateau	0.20	0.32
	Sticks N Stones	Snowshoe Mountain Resort – Silver Creek	0.70	1.12

(*Table continues*)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	STP Road	Snowshoe Mountain Resort- Western Territory	1.70	2.72
	Substation Road	Snowshoe Mountain Resort – Silver Creek	1.10	1.76
	Swamper Loop	Snowshoe Mountain Resort- Western Territory	1.50	2.40
	T.M. Cheek Trail	Watoga State Park	0.50	0.80
	Take It Easy	Snowshoe Mountain Resort – The Plateau	0.70	1.12
	Tea Creek	MNF - Marlinton District - Tea Creek Recreation Area	6.80	10.88
	Tea Creek Mountain	MNF - Marlinton District - Tea Creek Recreation Area	2.60	4.16
	Ten Acre	Watoga State Park	0.50	0.80
	The Gauntlet	Snowshoe Mountain Resort – The Plateau	0.70	1.12
	The Shadows	Snowshoe Mountain Resort – Silver Creek	0.50	0.80
	The Waterfalls	Snowshoe Mountain Resort- Western Territory	0.10	0.16
	Thomas Mountain Road	Seneca State Forest	2.00	3.20
	Thorny Creek	Seneca State Forest	6.00	9.60
	Thread The Needle	Snowshoe Mountain Resort – Silver Creek	0.10	0.16
	Timber-r-r	Snowshoe Mountain Resort- Western Territory	0.40	0.64
	To Granma's House	Snowshoe Mountain Resort – The Plateau	0.30	0.48
	Tower	Droop Mountain Battlefield State Park	0.50	0.80
	Tumbling Rock	MNF - Gauley District – Cranberry Wilderness Area	2.50	4.00
	Turkey Point	MNF - Marlinton District - Tea Creek Recreation Area	1.50	2.40
	Turkey Point Connector	MNF - Marlinton District – Tea Creek Recreation Area	1.30	2.08
	Turkey Trot	Snowshoe Mountain Resort – The Plateau	1.70	2.72
	Twin Branch	MNF - Gauley District – Cranberry Wilderness Area	1.50	2.40
	Two Lick	MNF - Marlinton District - Pocahontas Recreation Area	4.30	6.88
	Upper Beaver Dam	Snowshoe Mountain Resort - Silver Creek	0.40	0.64
	Upper Hawthorn Road	Snowshoe Mountain Resort- Western Territory	1.40	2.24
	Upper Spruce Road	Snowshoe Mountain Resort - Silver Creek	1.80	2.88

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Village to Lake	Snowshoe Mountain Resort – Snowshoe Basin	0.80	1.28
	Walking Path	Snowshoe Mountain Resort- Western Territory	1.60	2.56
	West Fork Rail	MNF - Greenbrier District - Shavers Mountain Area	22.00	35.20
	West Plateau	Snowshoe Mountain Resort - The Plateau	0.30	0.48
	Westridge Road	Snowshoe Mountain Resort - The Plateau	2.40	3.84
	Williams River	MNF - Marlinton District - Tea Creek Recreation Area	3.00	4.80
	Yew Pine	Snowshoe Mountain Resort – Snowshoe Basin	0.70	1.12
	Allegeny Trail		0.75	1.20
	Allegheny Trail		91.20	145.92
	Allegheny Trail Spur		0.07	0.11
	Blue Knob Trail		0.70	1.12
	Bruffey Reserve		1.13	1.81
	Brush Run Trail		2.60	4.16
	Charles Creek		1.10	1.76
	Cranberry Glades Boardwalk		0.55	0.88
	Eagle Camp Trail		0.95	1.52
	Falls of Hill Creek Trail		0.30	0.48
	Fork Mountain Trail		4.60	7.36
	Forks By-Pass Trail		0.59	0.94
	Frosty Gap		5.96	9.54
	Gaudineer Interpretive Trail		0.26	0.42
	Gaudineer Scenic Trail		0.18	0.29
	Gauley-Tea Ck. Connector		0.49	0.78
	Lake Buffalo		0.84	1.34
	Laurel River Trail		1.06	1.70
	Marlin Mountain Trail		1.25	2.00
	Pocahontas Trail		10.06	16.10
	Proposed Handicap Trail		0.10	0.16
	Props Run Trail		5.00	8.00
	Scenic RR Loop Trail		0.80	1.28
	South Fork Trail		5.10	8.16
	Sugar Camp Trail		2.00	3.20
	Thomas Reserve		0.88	1.41
	Two Lick Bottom		1.58	2.53
Subtotal			594.80	951.68
Preston	Blackberry	Pine Hill Campground	1.00	1.60
	Cardinal	Cathedral State Park	0.20	0.32
	Cathedral	Cathedral State Park	1.10	1.76
	Chestnut Ridge Park	Bruceton Mills	6.00	9.60
	Coopers Rock Roadside	Coopers Rock State Forest		

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Cranesville Swamp	Nature Conservancy of West Virginia	0.40	0.64
	Giant Hemlock	Cathedral State Park	0.20	0.32
	Kingwood to Tunnelton Rail	Friends of The Cheat	10.00	16.00
	Lone Pine	Pine Hill Campground		
	Old Oakland Road	Cathedral State Park	0.40	0.64
	Overlook	Pine Hill Campground		
	Partridge Berry	Cathedral State Park	0.60	0.96
	Red Pine	Pine Hill Campground		
	Trillium	Cathedral State Park	0.10	0.16
	Wood Thrush	Cathedral State Park	0.60	0.96
	Allegheny Trail		62.75	100.40
	Deckers Creek Rail-Trail		6.40	10.24
	Scott Run Trail		2.27	3.63
Subtotal			92.02	147.23
Putnam	Buffalo High School	Putnam County Board of Education	0.30	0.48
	Eleanor - Blue	Putnam County Parks	1.90	3.04
	Eleanor - Orange	Putnam County Parks	0.60	0.96
	Eleanor - Red	Putnam County Parks	0.40	0.64
	Eleanor - Yellow	Putnam County Parks	1.00	1.60
	George Washington Middle School	Putnam County Board of Education	0.30	0.48
	Hurricane City Park	Putnam County Parks	1.00	1.60
	Hurricane High School	Putnam County Board of Education	0.30	0.48
	Kanawha Trace	Tri-State Council, Boy Scouts of America- Camp Arrowhead	4.70	7.52
	Poca High School	Putnam County Board of Education	0.30	0.48
	Valley Park - Blue	Putnam County Parks	0.60	0.96
	Valley Park - Orange	Putnam County Parks	0.40	0.64
	Valley Park - Red	Putnam County Parks	0.70	1.12
	Valley Park - Yellow	Putnam County Parks	0.60	0.96
	Waves of Fun Park	Putnam County Parks	1.50	2.40
	Winfield High School	Putnam County Board of Education	0.30	0.48
Subtotal			14.90	23.84
Raleigh	Beaver Creek	Little Beaver State Park	0.50	0.80
	Beckley Rail	Beckley	4.00	6.40
	Big Buck	NPS - New River Gorge National River – Grandview Visitor Center	0.70	1.12
	Billy Goat's Gruff	Little Beaver State Park	0.60	0.96
	Castle Rock	NPS - New River Gorge National River – Grandview Visitor Center	0.60	0.96
	Creek Bed	Little Beaver State Park	0.40	0.64
	Deer Loop	Little Beaver State Park	0.40	0.64
	Deer Trail	Little Beaver State Park	0.80	1.28
	Fitzpatrick Park	Raleigh County Recreation Authority	1.30	2.08
	Grandview Rim	NPS - New River Gorge National River – Grandview Visitor Center	1.60	2.56

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Randolph	Lake Stephens	Raleigh County Recreation Authority		
	Laurel Creek Crossing	Little Beaver State Park	1.80	2.88
	Nature Ridge	Little Beaver State Park	0.80	1.28
	Railroad Grade	Little Beaver State Park	0.90	1.44
	Rhododendron Run	Little Beaver State Park	2.10	3.36
	Topper's Ridge	Little Beaver State Park	0.60	0.96
	Tunnel	NPS - New River Gorge National River – Grandview Visitor Center	0.50	0.80
	Woodland Loop	NPS - New River Gorge National River – Grandview Visitor Center	0.60	0.96
	Glade Creek Trail		4.82	7.71
	Mom's Mountain Trail System		7.25	11.60
	Subtotal		30.30	48.48
	Allegheny Highlands	Highlands Trail Foundation	14.00	22.40
	Allegheny Mountain Trail	MNF - Potomac District - Spruce Knob National Recreation Area	2.45	3.92
	Back Ridge	MNF - Potomac District - Spruce Knob National Recreation Area	4.60	7.36
	Balsam	MNF - Greenbrier District - Shavers Mountain Area		
	Bear Hunter	MNF - Potomac District - Spruce Knob National Recreation Area	1.00	1.60
	Bee	MNF - Potomac District - Spruce Knob National Recreation Area	1.60	2.56
	Beulah	MNF - Greenbrier District - Middle Mountain Area	4.16	6.66
	Big Run	MNF - Potomac District - Spruce Knob National Recreation Area	3.20	5.12
	Boars Nest	MNF - Potomac District - Flatrock and Roaring Plains Area	2.70	4.32
	Camp Five	MNF - Greenbrier District - Middle Mountain Area	1.60	2.56
	Chestnut Ridge	MNF - Greenbrier District - Cheat Mountain Area	4.80	7.68
	Clay Run	Kumbrabow State Forest	0.80	1.28
	Couch Ridge	MNF - Greenbrier District - Cheat Mountain Area	2.90	4.64
	County Line	MNF - Greenbrier District - Middle Mountain Area	2.66	4.26
	Elza	MNF - Potomac District - Spruce Knob National Recreation Area	2.00	3.20
	Flatrock Run	MNF - Potomac District - Flatrock and Roaring Plains Area	5.10	8.16
	Forks	MNF - Greenbrier District - Middle Mountain Area	0.98	1.57
	Gatewood	MNF - Potomac District - Spruce Knob National Recreation Area	0.18	0.29

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Gaudineer Interpretive	MNF - Gaudineer Scenic Area	0.50	0.80
	Gaudineer Scenic	MNF - Gaudineer Scenic Area	0.14	0.22
	Glendale Park	Elkins Parks and Recreation Commission	1.00	1.60
	High Falls	MNF - Greenbrier District - Shavers Mountain Area	2.70	4.32
	High Meadows	MNF - Potomac District - Spruce Knob National Recreation Area	1.90	3.04
	Horton	MNF - Potomac District - Spruce Knob National Recreation Area	3.50	5.60
	Hucklebberly	MNF - Potomac District - Spruce Knob National Recreation Area	6.00	9.60
	Judy Springs	MNF - Potomac District - Spruce Knob National Recreation Area	1.00	1.60
	Laurel River (North)	MNF - Greenbrier District - Middle Mountain Area	9.60	15.36
	Laurel River (South)	MNF - Greenbrier District - Middle Mountain Area	7.60	12.16
	Leading Ridge	MNF - Potomac District - Spruce Knob National Recreation Area	5.10	8.16
	Lumberjack	MNF - Potomac District - Spruce Knob National Recreation Area	3.30	5.28
	McGray Run	MNF - Greenbrier District - Middle Mountain Area	3.90	6.24
	Meatbox Run	Kumbrabow State Forest	1.50	2.40
	Middle Mountain	MNF - Greenbrier District - Middle Mountain Area	1.00	1.60
	Mill Ridge Fire	Kumbrabow State Forest	1.00	1.60
	Mowry	Kumbrabow State Forest	0.50	0.80
	North Prong	MNF - Potomac District - Spruce Knob National Recreation Area	2.80	4.48
	Potato Hole	Kumbrabow State Forest	2.00	3.20
	Raven Rocks	Kumbrabow State Forest	1.00	1.60
	Rich Mountain Battlefields	Rich Mountain Battlefield Foundation	4.00	6.40
	Rich Mountain Fire	Kumbrabow State Forest	3.50	5.60
	Roaring Plains	MNF - Potomac District - Flatrock and Roaring Plains Area	3.30	5.28
	Seneca Creek	MNF - Potomac District - Spruce Knob National Recreation Area	5.00	8.00
	Seneca Rocks Hiking	MNF - Potomac District - Seneca Rocks National Recreation Area	1.30	2.08
	Shallow Rock	MNF - Potomac District - Spruce Knob National Recreation Area	3.20	5.12
	Short	MNF - Potomac District - Spruce Knob National Recreation Area	0.50	0.80
	South Prong	MNF - Potomac District - Flatrock and Roaring Plains Area	3.40	5.44
	Spring Box Loop	MNF - Greenbrier District - Middle Mountain Area	1.80	2.88

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Spring Ridge	MNF - Potomac District - Spruce Knob National Recreation Area	3.10	4.96
	Spruce Knob Lake	MNF - Potomac District - Spruce Knob National Recreation Area	1.00	1.60
	Stone Camp Run	MNF - Greenbrier District - Middle Mountain Area	1.50	2.40
	Stonecoal Ridge	MNF - Greenbrier District - Cheat Mountain Area	4.00	6.40
	Strip Mine	MNF - Greenbrier District - Cheat Summit Fort Area	4.00	6.40
	Tom Lick Run	MNF - Potomac District - Spruce Knob National Recreation Area	0.01	0.01
	Turkey	MNF - Greenbrier District - Cheat Mountain Area	1.00	1.60
	Turkey Scratch Nature	MNF-Stuart Campground	0.66	1.06
	West Fork Rail	MNF - Greenbrier District - Shavers Mountain Area	7.56	12.10
	Whispering Spruce	MNF - Potomac District - Spruce Knob National Recreation Area	0.50	0.80
	Whitemeadow Ridge	MNF - Greenbrier District - Cheat Mountain Area	4.60	7.36
	Whitman	Kumbrabow State Forest	2.00	3.20
	Wildcat Ridge	MNF - Greenbrier District - Cheat Mountain Area	0.87	1.39
	Yokum Ridge Spur	MNF - Greenbrier District -Cheat Mountain Area	1.00	1.60
	Allegheny Trail		33.48	53.57
	Crouch Ridge Trail		2.96	4.74
	Grants Branch Trail		2.25	3.60
	Hedrick Camp Trail		1.13	1.81
	Horton Trail		2.40	3.84
	Johns Camp Run Trail		0.84	1.34
	McGowan Mountain Trail		3.82	6.11
	Middle Point Trail		3.73	5.97
	Moore Run Trail		4.20	6.72
	Mylus Trail		2.50	4.00
	Otter Creek Trail		6.05	9.68
	Possession Camp Trail		2.30	3.68
	Props RunTrail		1.38	2.21
	River Loop Trail		1.37	2.19
	Roaring Plains Trail		2.74	4.38
	Shavers Mountain Trail		8.54	13.66
	South Haddix Trail		2.00	3.20
	Swallow Rock Trail		2.31	3.70
	Turkey Run Trail		0.57	0.91
	Yellow Creek Trail		1.35	2.16
	Yokum Ridge Trail		1.46	2.34

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Subtotal			255.90	409.44
Ritchie	Access	North Bend State Park	1.20	1.92
	Castle Rock Spur	North Bend State Park	0.30	0.48
	Extra Mile	North Bend State Park	0.60	0.96
	Giant Pine	North Bend State Park	0.60	0.96
	Giant Tree	North Bend State Park	0.50	0.80
	Gibbons Nature	North Bend State Park	0.30	0.48
	Harrisville Municipal Park	Harrisville	6.00	9.60
	Hibbs Cemetery	North Bend State Park	1.00	1.60
	Lake	North Bend State Park	6.00	9.60
	Nature	North Bend State Park	4.00	6.40
	North Bend Lake	North Bend State Park	25.00	40.00
	North Bend Rail	North Bend State Park		
	Overhanging Rock	North Bend State Park	0.50	0.80
	Overlook	North Bend State Park	1.20	1.92
	Southern Railroad	North Bend State Park	1.50	2.40
	Tanker Run Spur	North Bend State Park	0.80	1.28
	Ten Acre	North Bend State Park	3.00	4.80
Subtotal			52.50	84.00
Roane	Charles Fork Lake	Spencer		
	Coachman Ridge	Wallback WMA	1.10	1.76
	Granny Creek	Wallback WMA	1.80	2.88
	Upper King Shoals	Wallback WMA	1.70	2.72
Subtotal			4.60	7.36
Summers	Barton Ridge Trail	Bluestone WMA	1.30	2.08
	Bertha	Bluestone WMA	1.30	2.08
	Big Branch Loop	NPS - New River Gorge National River – Sandstone Falls Area	2.00	3.20
	Bluestone Turnpike	NPS- Bluestone River National Scenic River	8.00	12.80
	Buffalo Creek	Bluestone WMA	2.80	4.48
	Canyon Rim	Pipestem Resort State Park	0.70	1.12
	Cedar Branch	Bluestone WMA	1.50	2.40
	Cottage	Pipestem Resort State Park	0.20	0.32
	County Line	Pipestem Resort State Park	1.90	3.04
	Crumps Bottom Road	Bluestone WMA	5.00	8.00
	Den Tree	Pipestem Resort State Park	0.60	0.96
	Dogwood	Pipestem Resort State Park	0.60	0.96
	Farley Loop	Pipestem Resort State Park	3.00	4.80
	Lake Shore	Pipestem Resort State Park	2.20	3.52
	Lake View	Pipestem Resort State Park	0.40	0.64
	Law Hollow	Pipestem Resort State Park	0.50	0.80
	Lick Hollow	Pipestem Resort State Park	1.60	2.56
	Long Branch	Pipestem Resort State Park	0.30	0.48
	North Side	Pipestem Resort State Park	0.50	0.80
	Pipestem Knob	Pipestem Resort State Park	0.20	0.32

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
Taylor	Red Sulphur Turnpike	Bluestone WMA	2.00	3.20
	River	Pipestem Resort State Park	5.30	8.48
	Round Bottom	Bluestone WMA	9.50	15.20
	Sandstone Falls Boardwalk	NPS - New River Gorge National River – Sandstone Falls Area	0.30	0.48
	South Side	Pipestem Resort State Park	0.60	0.96
	Turkey Spur	Pipestem Resort State Park	0.40	0.64
	Upper Shanklin's Ferry	Bluestone WMA	1.50	2.40
	Bluestone River Trail		7.77	12.43
	Subtotal		61.97	99.15
	Camping	Pleasant Creek WMA	0.50	0.80
Taylor	Doe Run	Pleasant Creek WMA	2.30	3.68
	Dogwood	US Army - Corps of Engineers - Tygart Lake	0.10	0.16
	Dogwood	Tygart Lake State Park	1.40	2.24
	Lake	Tygart Lake State Park	0.50	0.80
	Ridge	Tygart Lake State Park	0.80	1.28
	Ridge	Pleasant Creek WMA	0.70	1.12
	Tygart Dam	US Army - Corps of Engineers - Tygart Lake	0.10	0.16
	Woodland	Tygart Lake State Park	1.50	2.40
	Subtotal		7.90	12.64
	A Frame Road	Canaan Valley National Wildlife Refuge	4.80	7.68
Tucker	Abe Run	Canaan Valley Resort State Park	0.80	1.28
	Allegheny Highlands	Highlands Trail Foundation		
	Back Hollow	Canaan Valley Resort State Park	3.00	4.80
	Baker Sods	MNF - Cheat District – Otter Creek Wilderness Area	3.00	4.80
	Balanced Rock	Blackwater Falls State Park	1.00	1.60
	Bald Knob	Canaan Valley Resort State Park	2.50	4.00
	Balsam Fir	Blackwater Falls State Park	1.50	2.40
	Beall	Canaan Valley National Wildlife Refuge	4.50	7.20
	Beaver Creek Trail	Canaan Valley Institute	1.20	1.92
	Beaver Dam	MNF - Potomac District - Dolly Sods Area	0.70	1.12
	Beaver View	MNF - Potomac District - Dolly Sods Area	1.20	1.92
	Bennett Rock	MNF - Cheat District - Canaan Mountain Area	0.70	1.12
	Big Springs Gap	MNF - Cheat District - Otter Creek Wilderness Area	0.90	1.44
	Big Stonecoal	MNF - Potomac District - Dolly Sods Area	4.40	7.04
	Blackbird Knob	Canaan Valley National Wildlife Refuge	0.70	1.12
	Blackbird Knob	MNF - Potomac District - Dolly Sods Area	2.20	3.52
	Blackwater Canyon Railroad Grade	MNF - Cheat District - Backbone Mountain Area	10.00	16.00
	Blackwater Falls Boardwalk	Blackwater Falls State Park	0.30	0.48
	Blackwater River	Canaan Valley Resort State Park	0.80	1.28
	Blackwater View	Canaan Valley National Wildlife Refuge	1.40	2.24

(Table continues)

Appendix E. (*continued*)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Boundary	MNF - Cheat District - Backbone Mountain Area	3.50	5.60
	Breathed Mountain	MNF - Potomac District - Dolly Sods Area	2.50	4.00
	Brown Mountain	Canaan Valley National Wildlife Refuge	2.40	3.84
	Brown Mountain Overlook	Canaan Valley National Wildlife Refuge	2.00	3.20
	Cabin Mountain	Canaan Valley National Wildlife Refuge	2.00	3.20
	Cabin Mountain Spur	Canaan Valley National Wildlife Refuge	0.80	1.28
	Camp 70 Loop	Canaan Valley National Wildlife Refuge	1.80	2.88
	Canyon Rim	MNF - Cheat District - Backbone Mountain Area	3.10	4.96
	Cherry Lane	Blackwater Falls State Park	1.00	1.60
	Clover	MNF - Cheat District - Pheasant Mountain Area	2.00	3.20
	Club Run	Canaan Valley Resort State Park	1.00	1.60
	Davis	MNF - Cheat District - Canaan Mountain Area	2.80	4.48
	Davis	Blackwater Falls State Park	0.30	0.48
	Deer Run	Canaan Valley Resort State Park	1.50	2.40
	Dobbin Grade	MNF - Potomac District - Dolly Sods Area	4.30	6.88
	Dobbin House	Blackwater Falls State Park	0.80	1.28
	Dorman Ridge	MNF - Cheat District - Horseshoe Recreation Area	1.30	2.08
	Dunkenbarger	MNF - Potomac District - Dolly Sods Area	1.60	2.56
	Elakala	Blackwater Falls State Park	0.50	0.80
	Fansler	MNF - Cheat District - Backbone Mountain Area	3.10	4.96
	Fire Trail #1	MNF - Cheat District - Canaan Mountain Area	0.40	0.64
	Fire Trail #2	MNF - Cheat District - Canaan Mountain Area	0.40	0.64
	Fire Trail #3	MNF - Cheat District - Canaan Mountain Area	0.80	1.28
	Fire Trail #6	MNF - Cheat District - Canaan Mountain Area	1.10	1.76
	Firelane Split	MNF - Cheat District - Canaan Mountain Area	2.00	3.20
	Fisher Spring Run	MNF - Potomac District - Dolly Sods Area	2.30	3.68
	Flag Run	MNF - Cheat District - Canaan Mountain Area	1.00	1.60
	Forest Road 80	Canaan Valley National Wildlife Refuge	1.90	3.04
	Freeland	Canaan Valley National Wildlife Refuge	0.20	0.32
	Gee Haw	Blackwater Falls State Park	0.50	0.80
	Gentle	Blackwater Falls State Park	0.30	0.48
	Green Mountain	MNF - Cheat District - Otter Creek Wilderness Area	4.00	6.40
	Harman	MNF - Potomac District - Dolly Sods Area	1.40	2.24

(*Table continues*)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Hedrick Camp	MNF - Cheat District – Otter Creek Wilderness Area	1.00	1.60
	Horseshoe Run Nature	MNF - Cheat District - Horseshoe Recreation Area	0.50	0.80
	Idleman's Run	Canaan Valley National Wildlife Refuge	0.40	0.64
	JoJo's Curve	Canaan Valley Institute	0.50	0.80
	JoJo's Curve	Canaan Valley Institute	0.50	0.80
	Limerock	MNF - Cheat District - Backbone Mountain Area	4.10	6.56
	Lindy Point	Blackwater Falls State Park	0.40	0.64
	Lindy Run	MNF - Cheat District - Canaan Mountain Area	2.80	4.48
	Little Stonecoal	MNF - Potomac District - Dolly Sods Area	1.80	2.88
	Losh Run	MNF - Cheat District - Horseshoe Recreation Area	1.80	2.88
	Maxwell Run	MNF - Cheat District - Horseshoe Recreation Area	2.10	3.36
	McGowan Mountain	MNF - Cheat District – Otter Creek Wilderness Area	3.50	5.60
	McKinley Run	MNF - Cheat District - Horseshoe Recreation Area	1.00	1.60
	Middle Point	MNF - Cheat District - Otter Creek Wilderness Area	1.60	2.56
	Middle Ridge	Canaan Valley Resort State Park	2.50	4.00
	Middle Valley	Canaan Valley National Wildlife Refuge	6.20	9.92
	Mikes Run	MNF - Cheat District - Horseshoe Recreation Area	4.00	6.40
	Mill Race Park	Parsons	1.00	1.60
	Mill Run	Canaan Valley Resort State Park	1.00	1.60
	Moore Run	MNF - Cheat District – Otter Creek Wilderness Area	4.10	6.56
	Mountainside	MNF - Cheat District - Canaan Mountain Area	4.80	7.68
	Mylius	MNF - Cheat District - Otter Creek Wilderness Area	2.40	3.84
	North Rim Road & Campground Loop	Blackwater Falls State Park	1.50	2.40
	Northland Loop Interpretive	MNF - Potomac District -Dolly Sods Area	0.30	0.48
	Otter Creek	MNF - Cheat District – Otter Creek Wilderness Area	11.00	17.60
	Pase Point	Blackwater Falls State Park	0.70	1.12
	Pendleton Trace	Blackwater Falls State Park	0.30	0.48
	Pheasant Mountain	MNF - Cheat District - Pheasant Mountain Area	4.70	7.52
	Plantation	MNF - Cheat District - Canaan Mountain Area	8.40	13.44

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Pointy Knob	MNF - Cheat District - Canaan Mountain Area	5.20	8.32
	Possession Camp	MNF - Cheat District – Otter Creek Wilderness Area	3.30	5.28
	Railroad Grade	Canaan Valley Resort State Park	2.50	4.00
	Railroad Grade	MNF - Cheat District - Canaan Mountain Area	3.10	4.96
	Raven's Ridge	MNF - Potomac District - Dolly Sods Area	2.80	4.48
	Red Creek	MNF - Potomac District - Dolly Sods Area	6.10	9.76
	Red Spruce Riding	Blackwater Falls State Park	1.30	2.08
	Rhododendron	Blackwater Falls State Park	0.50	0.80
	Ridge Top	Canaan Valley Resort State Park	0.10	0.16
	River Road	Blackwater Falls State Park	1.60	2.56
	Rock Shox	Canaan Valley Institute	0.80	1.28
	Rock Shox Trail	Canaan Valley Institute	0.80	1.28
	Rocky Point	MNF - Potomac District - Dolly Sods Area	1.80	2.88
	Rocky Ridge	MNF - Potomac District - Dolly Sods Area	3.00	4.80
	Rohrbaugh Plains	MNF - Potomac District - Dolly Sods Area	3.50	5.60
	Sand Run	Canaan Valley National Wildlife Refuge	0.90	1.44
	Shavers Mountain	MNF - Cheat District – Otter Creek Wilderness Area	10.00	16.00
	Shay Trace	Blackwater Falls State Park	0.80	1.28
	Sherald's Shunt	Canaan Valley Institute	0.80	1.28
	Sherald's Shunt	Canaan Valley Institute	0.80	1.28
	Shingletree South	MNF - Cheat District - Pheasant Mountain Area	4.50	7.20
	South Glade Run Crossing	Canaan Valley National Wildlife Refuge	0.80	1.28
	South Haddix	MNF - Cheat District – South Haddix Area	6.80	10.88
	Spudder Track	Blackwater Falls State Park	0.50	0.80
	Swinging Bridge	Canaan Valley National Wildlife Refuge	1.10	1.76
	Table Rock Overlook	MNF - Cheat District - Canaan Mountain Area	1.10	1.76
	Thomas Loop	Thomas Parks & Recreation	1.00	1.60
	Thomas Parks	Thomas Parks & Recreation	8.00	12.80
	Trials Road	Canaan Valley Institute	1.50	2.40
	Trials Road	Canaan Valley Institute	1.50	2.40
	Turkey Run	MNF - Cheat District – Otter Creek Wilderness Area	4.00	6.40
	Two Camp Trail	MNF - Cheat District - Canaan Mountain Area	0.30	0.48
	Valley Overlook	Canaan Valley National Wildlife Refuge	0.06	0.10
	Watertank	Blackwater Falls State Park	0.30	0.48
	Wildlife	MNF - Potomac District - Dolly Sods Area	1.20	1.92
	Yellow Birch	Blackwater Falls State Park	1.00	1.60
	Yellow Creek	MNF - Cheat District – Otter Creek Wilderness Area	1.30	2.08
	Allegheny Mountain Trail		4.24	6.78

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Allegheny Trail		57.83	92.53
	Bear Rocks Trail		2.38	3.81
	Beaver Dam Trail		0.71	1.14
	Dinky Jumpoff Trail		0.43	0.69
	Woodcock Trail		0.61	0.98
Subtotal			325.96	521.54
Tyler	Paden City Park	Paden City	2.30	3.68
	Sisterville River	Tyler County Development Authority	0.50	0.80
Subtotal			2.80	4.48
Upshur	River	Buckhannon	0.30	0.48
Subtotal			0.30	0.48
Wayne	Ash Branch	Cabwaylingo State Forest	1.00	1.60
	Beaver Pond	US Army - Corps of Engineers - Beech Fork Lake	1.30	2.08
	Beech Ridge	Cabwaylingo State Forest	2.00	3.20
	Below Dam	US Army - Corps of Engineers - East Lynn Lake	0.50	0.80
	Copley	Cabwaylingo State Forest	3.00	4.80
	East Fork	US Army - Corps of Engineers - East Lynn Lake	2.00	3.20
	Indian	Cabwaylingo State Forest	1.00	1.60
	Lakeside	US Army - Corps of Engineers - East Lynn Lake	1.80	2.88
	Lakeview	Beechfork State Park	1.00	1.60
	Lost	Beechfork State Park	5.00	8.00
	Martin Ridge	Cabwaylingo State Forest	1.50	2.40
	Mary Davis	Wayne County Commission	3.50	5.60
	Nature	Beechfork State Park	0.80	1.28
	Overlook	Beechfork State Park	1.00	1.60
	Overlook	US Army - Corps of Engineers - East Lynn Lake	1.50	2.40
	Physical Fitness	Beechfork State Park	0.80	1.28
	Rock Hollow	US Army - Corps of Engineers - Beech Fork Lake	0.50	0.80
	Sleepy Hollow	Cabwaylingo State Forest	2.00	3.20
	Spillway	US Army - Corps of Engineers - Beech Fork Lake	1.40	2.24
	Spruce Creek	Cabwaylingo State Forest	1.00	1.60
	Twin Coves	US Army - Corps of Engineers - Beech Fork Lake	3.00	4.80
Subtotal			35.60	56.96
Webster	Adkins Rockhouse	MNF - Gauley District - Bishop Knob Recreation Area	2.10	3.36
	Barrenshe	MNF - Gauley District - Bishop Knob Recreation Area	4.50	7.20
	Big Sycamore Park	Webster Springs (Addison)	2.00	3.20

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Bishop Knob	MNF - Gauley District - Bishop Knob Recreation Area	2.50	4.00
	Cranberry Ridge	MNF - Gauley District - Bishop Knob Recreation Area	2.50	4.00
	High Rock	Holly River State Park	1.50	2.40
	Hinkle Branch	MNF - Gauley District - Bishop Knob Recreation Area	1.20	1.92
	Nature's Rock Garden	Holly River State Park	0.50	0.80
	Oak Ridge	Holly River State Park	2.50	4.00
	Potato Knob	Holly River State Park	7.50	12.00
	Railroad Grade	Holly River State Park	10.00	16.00
	Reverie	Holly River State Park	3.50	5.60
	Ridge Road	Holly River State Park	6.10	9.76
	Saltlick	Holly River State Park	0.80	1.28
	Three Falls of Back Fork	Webster Springs (Addison)	4.60	7.36
	Tramotane	Holly River State Park	2.50	4.00
	Wilderness	Holly River State Park	4.50	7.20
	Birch Log Trail		1.17	1.87
	County Line Trail		4.25	6.80
	Fishermans Trail		0.69	1.10
	Kennison Mountain Trail		0.22	0.35
	Lick Branch Trail		1.82	2.91
	Little Fork Trail		3.36	5.38
	Middle Fork Trail		1.36	2.18
	North South Trail		7.92	12.67
	Pocahontas Trail		3.62	5.79
	Rough Run Trail		3.58	5.73
	Subtotal		86.70	138.72
Wetzel	East Wetzel Rail	Hundred Area Pride	1.50	2.40
	Hart Ridge	Lewis Wetzel WMA	1.00	1.60
	High Knob	Lewis Wetzel WMA	3.30	5.28
	Hiles Run	Lewis Wetzel WMA	0.70	1.12
	Horse Run	Lewis Wetzel WMA	0.90	1.44
	Huss Pen	Lewis Wetzel WMA	0.90	1.44
	Leslin Run	Lewis Wetzel WMA	1.10	1.76
	Nettle Run	Lewis Wetzel WMA	1.40	2.24
	East Wetzel Rail-Trail		2.25	3.60
	Subtotal		13.05	20.88
Wirt	Poor Farm Trail	Wirt County Commission		
	Sportsman's Park Trail	Elizabeth	0.30	0.48
	Subtotal		0.30	0.48
Wood	Blennerhassett Island	Blennerhassett Island Historical State Park	1.00	1.60
	Copperhead Road	Mountwood Park	3.00	4.80
	Dark Side of the Moon	Mountwood Park	2.00	3.20
	Gary's Grind	Mountwood Park	2.00	3.20
	Haystack	Mountwood Park	3.00	4.80

(Table continues)

Appendix E. (continued)

County	Trail name	Land Manager	Trail length	
			Mi	Km
	Hunters Roost	Mountwood Park	1.00	1.60
	Lake	Mountwood Park	3.50	5.60
	Little Kanawha Connector	Parkersburg	0.50	0.80
	Lubeck Community Park Trail	Lubeck Volunteer Fire Department	0.50	0.80
	McDonough Wildlife Refuge	Vienna Department of Parks and Recreation	11.00	17.60
	Medicine Man	Mountwood Park	2.50	4.00
	North Bend Rail	North Bend State Park		
	North Hills	North Hills	0.50	0.80
	Ohio River Islands	Ohio River Islands National Wildlife Refuge	1.50	2.40
	Parkersburg City Park	Parkersburg	1.00	1.60
	Stiles Mansion	Mountwood Park	2.50	4.00
	Tecumseh	Mountwood Park	2.50	4.00
	Trip to the Moon	Mountwood Park	2.00	3.20
	White Oak	Mountwood Park	3.00	4.80
	Little Kanawha Connector Trail		3.65	5.84
	Mountwood ATV Trails		8.82	14.11
	North Bend Rail-Trail		16.25	26.00
Subtotal			71.72	114.75
Wyoming	Buck Run	Twin Falls State Park	0.80	1.28
	Cliffside	Twin Falls State Park	3.00	4.80
	Falls	Twin Falls State Park	1.30	2.08
	Hemlock	Twin Falls State Park	2.00	3.20
	Horsepen Knob	Twin Falls State Park	2.50	4.00
	Huckleberry	Twin Falls State Park	1.30	2.08
	Moonshiner's	Twin Falls State Park	3.30	5.28
	Nature	Twin Falls State Park	1.30	2.08
	Pathfinder	Twin Falls State Park	2.50	4.00
	Pinnacle Creek	Hatfield-McCoy Recreational Area	105.00	168.00
	Poke Hollow	Twin Falls State Park	3.50	5.60
	Rocky Road	Twin Falls State Park	3.00	4.80
	Still Run Ridge	Twin Falls State Park	2.50	4.00
	Twin Oaks	Twin Falls State Park	0.30	0.48
Subtotal			132.30	211.68