

CHAPTER III.

Affected Environment

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3.0 STUDY AREA

The NCHA encompasses 11 counties in southern West Virginia: Boone, Cabell, Fayette, Logan, McDowell, Mercer, Mingo, Raleigh, Summers, Wayne, and Wyoming Counties. The NCHA is made-up of over 5,000 square miles of mountainous terrain where the landscape, culture and history of the region were altered significantly due to the extraction and transportation of bituminous coal.

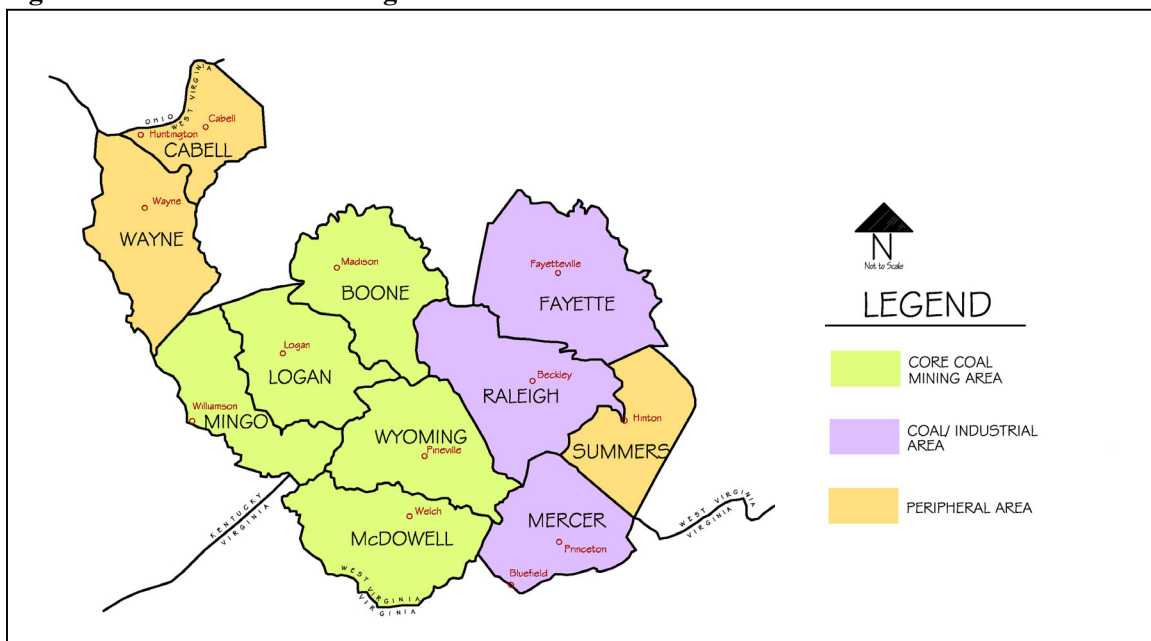
Prior to the development of the coal industry, much of the area within the NCHA was relatively unsettled and people were primarily involved in subsistence agriculture. Transportation routes were practically nonexistent. The coal boom brought about a dramatic increase in population and coal related infrastructure (company towns, railroads, mine works, etc.) in a relatively short period of time.

The 11 counties that make up the NCHA can be divided into the following three categories:¹ (See Figure 3.1)

Core Coal Mining Area: The core coal mining area consists of the counties where the coal industry was of such critical importance to their economic development that, according to economic historian, Richard Simon, their economies can be considered to be “monoeconomies.” These include: Boone, Logan, McDowell, Mingo and Wyoming Counties.

Coal Mining/Industrial Area: The coal mining/industrial area consists of the counties where coal was the most important industry, but other industries, and to a limited extent, agriculture, provided a more diversified economy. These include: Fayette, Mercer and Raleigh Counties.

Figure 3.1 Role of Coal Mining in the NCHA



¹Workman, Michael; *Historical Context for the Coal Heritage Study*, Institute for History of Technology and Industrial Archaeology, West Virginia University, 1991.

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Peripheral Area: The peripheral area consists of the counties where coal was not extensively mined (or mined at all), thus playing a limited role in their economic development. These counties provided transportation, financial services and labor to the coal mining counties. These include: Cabell, Summers and Wayne Counties.

3.1 CULTURAL RESOURCES

The history of the NCHA is represented by its above-ground and below-ground cultural resources. These historic and archaeological resources are described below.

Historic Resources

Historic Overview

Summary History: The NCHA has the most rugged topography of any area in West Virginia. Because of this ruggedness and lack of navigable streams, the area was inaccessible to substantial settlement. The earliest settlers were subsistence farmers. Salt mining and then coal extraction began in the early 19th century, but as late as 1880, the area reported few industrial wage earners.

The recent history of the area is most closely allied with the coal industry. Although coal had reportedly been discovered in the area as early as 1742, almost 100 years passed before a commercial coal industry developed in the area. Coal was first exported in the 1830s, but large-scale production did not begin until the 1850s. The industry, however, was hindered by the lack of infrastructure to transport the coal to market and then, the onset of the Civil War delayed attempts to address these issues.

After the Civil War, transportation improvements cleared the way for the expansion of the West Virginia coal industry. In 1873, the Chesapeake and Ohio Railroad was extended into the coal fields of southern West Virginia. Over the next 35 years, other railroads followed (e.g., Norfolk and Western, Guyandotte Valley, and Virginian). Although considered less important than the railroads to the expansion of the coal industry, a series of locks and dams and other improvements on area rivers facilitated transport of the coal to the Ohio River and markets beyond.

The West Virginia coal industry met with stiff competition from the established coal producers in the north. The northern producers had lower transportation costs to the northeast and Midwest market centers. The West Virginia coal areas, however, had coal that was easily accessible, thus keeping the cost of starting up and operating a mine lower. The mines were “drift mines”, so expensive excavation equipment or hoists were not required. The owners simply had to provide a simple wooden tibble, mules, some light track and workers. No power machinery was utilized, and miners supplied their own hand-held equipment.

The fact that the mines operated in areas that were essentially uninhabited required the mine operators to find workers and bring them into the area. Workers needed housing and, absent any towns or other willing developers, the coal operators assumed the responsibility of housing their workers. They paid their workers lower wages than their northern counterparts and set up the “company town” system of forcing workers to trade in the company store and paying them scrip, which was redeemable only at the company store. This system enhanced the profits of the mine operators.

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Formed in the central and Midwestern coalfields in 1890, the United Mine Workers of America (UMWA) organized in the northern coal fields in 1897. The northern operators were consequently forced to pay union scale wages; they were also faced regularly with the threat of strike. West Virginia vehemently fought to keep the unions out, and was quick to fill a gap when the northern mine workers walked out on strike. However, West Virginia was the scene of mine wars four times between 1912 and 1927, which pitted coal miners and their union leaders against mine owners, state and local officials and in one incident, against federal troops.

In the late 1890s, the more progressive coal companies began to electrify their mines and by 1900, about 15 percent of the state's output was extracted mechanically. By the 1920s, many of the small time operators were displaced by the large corporations, which came to dominate the industry. These large corporations profited but, because much of the land and many of the companies were absentee owned, little profit was reinvested in the area.

Between 1880 and 1927, when West Virginia became the leading producer of coal, production expanded from less than two million tons to over 145 million tons, or 28 percent of the total national production. Of that total, over 86 million tons were mined in the southern coal fields.

Through its history, the industry in West Virginia was primarily in mining/extraction, with only a small percentage in manufacturing. The boom era between 1918 and 1952 employed an average of 100,000 people per year. The decline in employment numbers began in 1948 with the enhancement of mine mechanization and advances in technology. By 1955, almost all of the southern West Virginia mines were fully mechanized. By 1998, under 25,000 workers were employed in the mining industry.

The West Virginia coal industry retains its prominence as a world leader in coal production, ranking near the top in U.S. total production and accounting for 36 percent of the total U.S. coal export. West Virginia has the fourth largest coal reserve in the nation.

Statement of Significance: Between 1927 and 1973, West Virginia led the nation in coal production. According to the National Park Service's 1993 *Coal Heritage Mining Study: Southern West Virginia*, the West Virginia "coal industry has been important in the development of the national, industrial economy. West Virginia coal has been widely considered as unsurpassed for quality; some seams are the best in the world. . . West Virginia coal has fed the boilers of the nation's trains, factories, fleets and power plants. As a processed fuel—coke—it has satisfied the enormous appetites of the nation's iron furnaces. It has been the basis for the tremendous growth in the American economy in the twentieth century and played a critical role in supporting America during wartime."

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According to the 1993 NPS study:

In no other state has coal mining so dominated the economy and social structure. In southern West Virginia, specifically, the industry has been pervasive, from the days of the first railroad in 1873 to the present, exporting huge amounts of coal recognized internationally for its quality. The remoteness of the area, combined with rapid industrialization and population growth, resulted in the creation of a society unusual for its ethnic and racial diversity. Today, the relationship among different elements of the past and present in the coal mining region forms a distinctive landscape of national interest.

Description of Historic Resources

The National Coal Heritage Area encompasses hundreds of square miles in southern West Virginia and contains six of West Virginia's fourteen coalfields. The area contains many important historic resources associated with the coal industry, as well as important resources that are not associated with the coal industry.

Recent studies have identified six significant endangered historic sites and structures in the study area:

1. Whipple Company Store, Fayette County
2. Gary Coke Ovens, McDowell County
3. World War II Memorial, McDowell County
4. Carswell Smokestack, McDowell County
5. Pocahontas Company Store/James Jones Residence, McDowell County
6. Itmann Company Store, Wyoming County

Identification of Historic Resources: A comprehensive survey of architectural/historical resources in the 11-county NCHA was not conducted for the preparation of the National Coal Heritage Area Strategic Management Plan.

Substantial work, however, has been done over the past decade to survey and identify coal-related resources. A study was undertaken in 1992 to identify historic resources in the 11-county coal heritage area. This study was consulted. A "Matrix of Historic Sites Associated with Coal Mining Heritage" in the NCHA was developed by the West Virginia Division of Culture and History and was also consulted for the management plan. A list of comprehensive surveys related to the NCHA, on file with the West Virginia Division of Culture and History (WVDCH), are listed in Appendix F.

Numerous coal-related and non-coal related resources are listed in the National Register of Historic Places (NRHP). The NRHP listings and a listing of properties formally determined eligible were consulted. The records search also revealed one National Historic Landmark, the Matewan Historic District in Mingo County. Table 3.1 below provides a list of all properties listed or formally determined eligible for the NRHP within the NCHA. Other resources in the 11-county area may meet the criteria for listing in the NRHP, but have not yet been identified.²

² Projects that arise from the NCHA Strategic Management Plan will entail site-specific surveys to comprehensively identify other previously unidentified resources that are eligible for the NRHP.

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TABLE 3.1
NRHP Listed or Determined Eligible Resources in the NCHA

<i>Resource</i>	<i>Location</i>	<i>Vicinity of</i>
Boone County		
Boone County Courthouse	State Street	Madison
Nellis Historic District	Off County Route 1	Nellis
Cabell County		
Thornburg House	700 Main Street	Barboursville
General Albert Gallatin Jenkins House	8814 Ohio River Road	Green Bottom
Thomas Carroll House	234 Guyan Street	Guyandotte
Baltimore and Ohio Railroad Depot	1100 Block of 2 nd Avenue	Huntington
Cabell County Courthouse	5 th Avenue and 8 th Street	Huntington
Campbell-Hicks House	1102 5 th Avenue	Huntington
Carnegie Public Library	900 5 th Street	Huntington
“Coin” Harvey House	1305 Third Avenue	Huntington
Douglass Junior and Senior High School	10 th Avenue and Bruce Street	Huntington
Huntington Downtown Historic District	Roughly bounded by 3 rd Avenue, 10 th Street, 5 th Avenue, 8 th and 7 th Streets	Huntington
Huntington High School	900 Eighth Street	Huntington
Liggett & Myers Tobacco Company	9-27 th Street	Huntington
Masonic Temple-Watts/Ritter Wholesale Drygoods	1100-1108 Third Avenue	Huntington
Memorial Arch, Memorial Park	11 th Avenue and Memorial Blvd.	Huntington
Ninth Street West Historic District	9 th Street, Madison and Jefferson Avenues	Huntington
Ohev Sholom Temple (B’Nai Sholom Temple)	949 10 th Avenue	Huntington
Old Main, Marshall University Campus	16 th Street	Huntington
Prichard House	500 Twelfth Street	Huntington
Ricketts House	2301 Washington Boulevard	Huntington
Ritter Park Historic District, Ritter Park	13 th Avenue	Huntington
Simms School	1680 Eleventh Avenue	Huntington
Old Bank Building	1208 Third Avenue	Huntington
U. S. Post Office and Courthouse	9 th Street and 5 th Avenue	Huntington
West Virginia Colored Children’s Home	3353 US 60	Huntington
Mud River Covered Bridge	Off US 60 on CR 25 over Mud River	Milton
Fayette County		
“Contentment” (Col. George Imboden House)	Along US 60	Ansted
“Halfway House” (Tyree Tavern)	Off old US 60	Ansted
Page-Vawter House	US 60	Ansted
Camp Washington-Carver Complex	CR 11/3	Clifftop
Old Stone House/Tyree Stone Tavern	E. of Clifftop off US 19 on SR 10	Clifftop
Altamont Hotel	110 Fayette Avenue	Fayetteville
Fayette County Courthouse	Court Street between Wiseman and Maple Avenue	Fayetteville
Fayetteville Historic District	Roughly bounded by SR 16, Maple & Fayette Avenue	Fayetteville
Fayetteville Historic District, Additional Documentation	Roughly bounded by SR 16, Maple & Fayette Avenue	Fayetteville
E. B. Hawkins House	120 Fayette Avenue	Fayetteville
Kaymoor Mine	Along the New River S of US 19	Fayetteville
Gauley Bridge Railroad Station (C&O Station)	Off SR 16/39	Gauley Bridge
Glen Ferris Inn (Stockton’s Inn)	US 60 overlooking Kanawha Falls	Glen Ferris
Bank of Glen Jean	Main Street	Glen Jean
Dr. John Hughart House	Off SR 41	Landisburg
Oak Hill Railroad Depot	Corner of Virginia Street & Central Ave.	Oak Hill

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**TABLE 3.1
NRHP Listed or Determined Eligible Resources in the NCHA**

Resource	Location	Vicinity of
Prince Brothers General Store (Berry Store)	SR 41	Prince
C&O Railroad Cabin (Quinmont Cabin)	Demolished June 1981	Quinmont
Cole House	New River Gorge National River Area	Quinmont
Thurmond Historic District	SR 25 at New River	Thurmond
Whipple Company Store	Jct. Of CR 15 and CR 21/20	Whipple
Logan County		
Chafin House	581 Main Street	Logan
Hatfield Cemetery	S. of Sarah Ann on US 119	Sarah Ann
McDowell County		
Coal Company Stores in McDowell County Multiple Property Submission:		
<i>Algoma Coal and Coke Company Store</i>	<i>CR 17</i>	<i>Algoma</i>
<i>Carter Coal Company Store</i>	<i>Jct of WV 16 and CR 12/8</i>	<i>Caretta</i>
<i>Carter Coal Company Store</i>	<i>CR 2</i>	<i>Coalwood</i>
<i>Pocahontas Fuel Company Store and Office Buildings</i>	<i>CR 8</i>	<i>Jenkinjones</i>
<i>Houston Coal Company Store</i>	<i>US 52</i>	<i>Kimball</i>
<i>Empire Coal Company Store</i>	<i>US 52</i>	<i>Landgraff</i>
<i>Pocahontas Fuel Company Store</i>	<i>US 52</i>	<i>Maybeury</i>
<i>Page Coal and Coke Company Store</i>	<i>SR 161</i>	<i>Pageton</i>
<i>US Coal and Coke Company Store</i>	<i>CR 13/2</i>	<i>Ream</i>
<i>Pocahontas Fuel Company Store</i>	<i>US 52</i>	<i>Switchback</i>
<i>Peerless Coal Company Store</i>	<i>S of US 52</i>	<i>Vivian</i>
John J. Lincoln House	Off US 52	Elkhorn
World War Memorial	US 52	Kimball
James Ellwood Jones House	N of US 52, E of Turkey Gap Branch	Switchback
McDowell County Courthouse	Wyoming Street	Welch
Welch Commercial Historic District	Roughly bounded by Wyoming Street, Elkhorn Circle and the tug River	Welch
Sandlick Sportsman's Club	County Road 13	Filbert
Mercer County		
Colonel William Henderson French House	S of Athens off SR 20	Athens
Bluefield Downtown Commercial Historic District	Roughly bounded by Priceton Avenue, Scott, High, and Russell Streets	Bluefield
Hancock House (Alpha House)	300 Sussex Street	Bluefield
Municipal Building of Bluefield	514 Bland Street	Bluefield
President's Home, Bluefield State College	Rock Street	Bluefield
South Bluefield Multiple Property Submission:		
<i>Country Club Hill Historic District</i>	<i>Along Whitehorn, Lebanon and Liberty Streets</i>	<i>Bluefield</i>
<i>Easley House</i>	<i>1500 College Avenue</i>	<i>Bluefield</i>
<i>Jefferson Street Historic District</i>	<i>Along Jefferson Street between Cumberland road and College Avenue</i>	<i>Bluefield</i>
<i>South Bluefield Historic District</i>	<i>Along Mountain View, Bland Road, Oakhurst and Parkway</i>	<i>Bluefield</i>
<i>Upper Oakhurst Historic District</i>	<i>Along Oakhurst, Groveland, Edgewood and Mountain View</i>	<i>Bluefield</i>
Bramwell Historic District	Main Rose, Bloch, Duhring, Wyatt, Church, N and S River Streets	Bramwell
Bramwell Additions Historic District (Boundary Increase)	Along Bluestone Avenue, SW of US 92	Bramwell
Dr. James W. Hale House (Temple Knob)	1034 Mercer Street	Princeton
Mercer County Courthouse	Courthouse Square, Main Street	Princeton
Dr. Robert B. McNutt	1522 Walker Street	Princeton
U. S. Post Office and Courthouse	601 Federal Street	Bluefield

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**TABLE 3.1
NRHP Listed or Determined Eligible Resources in the NCHA**

<i>Resource</i>	<i>Location</i>	<i>Vicinity of</i>
Mingo County		
Matewan Historic District	Roughly bounded by McCoy, Alley, Railroad Alley, Mate Street underpass, and Warm Hollow	Matewan
Hatfield Cemetery	S of New Town on SR 6	New Town
Coal House	2 nd Avenue and Court Street	Williamson
Mountaineer Hotel	31 E. 2 nd Street	Williamson
R. T. Price House	2405 West 3 rd Street	Williamson
Cotiga Mound	6 miles North of Williamson	Williamson
Summers County		
Hinton Historic District	Roughly bounded by C&O Railroad, James Street, 5 th Avenue, and Roundhouse	Hinton
Summers County Courthouse	Ballangee Street and 1 st Avenue	Hinton
Cooper's Mill	Off Ellison ridge Road/CR 27	Jumping Branch
Col. James Graham House	SW of Lowell on SR 3	Lowell
Samuel Gwinn Plantation	CR 15	Lowell
Pence Springs Hotel Historic District	Roughly bounded by SR 3, Buggy Branch Road, and Pence Springs Access Road	Pence Springs
Jordan's Chapel	NW of Pipestem on SR 18	Pipestem Vicinity
Wayne County		
Z. D. Ramsdell House	1008 B Street	Ceredo
Wildcat Branch Petroglyphs	Address restricted	Fort Gay
Joseph S. Miller House	748 Beech Street	Kenova
Spunky Bridge	Across Twelve Pole Creek, East of Spring Branch	Wayne
Veterans Administration	Medical Center	Huntington
Wyoming County		
Itmann Company Store and Office	SR 10/16	Itmann
Mullens Historic District	Roughly bounded by Lusk and Highland Avenue, Norfolk and southern RR tracks and Water Street	Mullens
Wyoming County Courthouse	Main Street	Pineville
Baileysville Arch Bridge	WVDOH/FHWA Project	Baileysville

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Archaeological Resources

Archaeological sites within the NCHA represent both prehistoric and historic occupations. Table 3.2 lists the number of archaeological sites previously identified within the study area.

TABLE 3.2
Previously Identified Archaeological Sites

<i>County</i>	<i>Number of Sites</i>
Boone	401
Cabell	197
Fayette	300
Logan	190
McDowell	50
Mercer	45
Mingo	89
Raleigh	239
Summers	673
Wayne	240
Wyoming	105
Total	2,529

West Virginia Division of Culture and History

Archaeological sites in the study area have also been listed in the NRHP. Table 3.3 lists the NRHP-listed or formally determined eligible sites. The locations of some of the sites are confidential.

TABLE 3.3
NRHP-Listed or Determined Eligible Archaeological Sites

<i>County</i>	<i>Site/Vicinity</i>	<i>NRHP Status</i>
Boone*	Coal River Locks, Dams and Log Boom Archaeological District	Listed
Mingo	Cotiga Mound/Williamson	Determined Eligible
Summers	Green Sulphur Springs Archaeological Site Complex/Green Sulphur Springs	Determined Eligible
Wayne	Wildcat Branch Petroglyphs/Fort Gay	Listed

* Also, Kanawha & Lincoln Counties

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Historic Landscapes

In addition to significant built structures and archaeological resources, the NCHA contains resources that can qualify for listing in the NRHP as a “Rural Historic Landscape.” According to *National Register Bulletin 30—Guidelines for Evaluating and Documenting Rural Historic Landscapes*, “a rural historic landscape is defined as a geographical area that historically has been used by people, or shaped or modified by human activities, occupancy or intervention, and that possess a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features.” The Bulletin states that rural historic landscapes reflect the day-to-day activities of people engaged in traditional work such as mining.³ No areas have been designated as Rural Historic Landscapes in the NCHA.

³ *National Register Bulletin 30 – Guidelines for Evaluating and Documenting Rural Historic Landscapes*

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3.2 OPEN SPACE AND RECREATIONAL RESOURCES

Regional Open Space and Recreational Resources

Southern West Virginia has numerous areas offering recreational opportunities including state parks and forests, national recognized rivers and recreation areas, wildlife management areas and thousands of miles of rugged terrain. Although the New, Gauley and Bluestone Rivers are the most well known, thousands of other streams, forks and rivers also wind through southern West Virginia. These rivers, parks, forests and other open spaces provide a wide range of recreation opportunities for visitors. Camping, hiking, rafting, skiing, fishing, and hunting abound throughout the region.

Wildlife Management Areas (WMAs) are abundant in the NCHA. The WMAs are owned by a broad range of entities including the Army Corps of Engineers, private enterprises and the West Virginia Division of Natural Resources (WVDNR); all are managed by WVDNR, which also houses the Department of Parks and Recreation. WMAs range in size from slightly over 1,000 acres to almost 23,000 acres. Table 3.4 enumerates the size of each area and gives information about available activities at each area.

Counties	WMA	Size (Acres)	Hunting	Fishing	Camping	Boating
Boone	Fork Creek	9,000	X	X	X	
Cabell & Wayne	Beech Fork Lake	7,531	X	X	X	X
Cabell	Mill Creek	1,470	X			
Cabell	Green Bottom	1,100	X	X		
Fayette	Plum Orchard Lake	3,201	X	X	X	X
McDowell	Berwind Lake	18,000	X	X		
Mercer, Summers & Monroe	Bluestone Lake	17,632	X	X	X	X
Mingo & Wyoming	R.D. Bailey Lake	17,280	X	X	X	X
Mingo	Laurel Lake	12,854	X	X	X	
Wayne	East Lynn Lake	22,928	X	X	X	

West Virginia Division of Natural Resources, 2001.

State parks and forests provide additional recreation opportunities and activities beyond those of the WMAs. Table 3.5 provides more detailed information about each park and forest located within the NCHA.

The New River Gorge National River Recreation Area, the largest recreational area in the region, is managed by the NPS and encompasses the New River Gorge National River, Grandview National Park, Sandstone Falls, Brooks Falls, and the Thurmond Historic District, which is listed on the NRHP. The New River hosts many visitors interested in whitewater rafting, as well as those interested in Bridge Day in October when the New River Gorge Bridge is closed to vehicular traffic.

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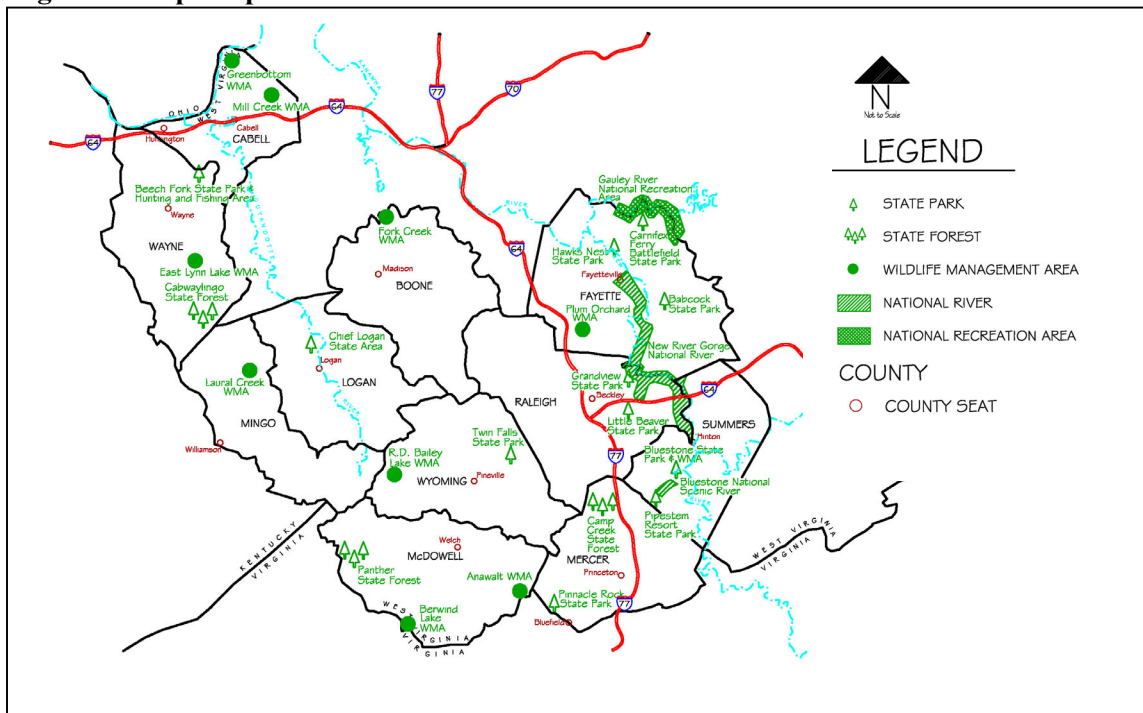
TABLE 3.5
State Parks and Forests within the NCHA

County	Park or Forest	Size (Acres)	Hunting and/or Fishing	Camping	Lodge and/or Cabins	Swimming and/or Boating	Golf	Hiking Trails
State Forests								
McDowell	Panther State Forest	10,640	X	X				X
Mercer	Camp Creek State Park & Forest	5,987	X	X				X
Wayne	Cabwayingo State Forest	8,123	X	X	X	X		X
State Parks								
Cabell & Wayne	Beech Fork State Park	3,981	X	X		X		X
Fayette	Babcock State Park	4,127	X	X	X	X		X
Fayette	Hawks Nest State Park	276			X	X		X
Logan	Chief Logan State Park	3,303		X		X		X
Mercer & Summers	Bluestone State Park	2,155	X	X	X	X		X
Mercer & Summers	Pipestem Resort State Park	4,024	X	X	X	X	X	X
Mercer	Pinnacle Rock State Park	364	X					X
Raleigh	Little Beaver State Park	562	X	X		X		X
Wyoming	Twin Falls Resort State Park	3,776		X	X	X	X	X

West Virginia Division of Natural Resources, 2001.

The Gauley River National Recreation Area is also managed by the NPS and hosts many enthusiasts seeking some of the best whitewater rapids in the nation. Both the New and Gauley Rivers have a variety of rafting experiences available; sections of the rivers offer different classification of rapids from Class I to Class V+. Figure 3.2 illustrates the locations of regional open space and recreational resources within the NCHA.

Figure 3.2 Open Space and Recreational Resources in the NCHA



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Area Attractions

The NCHA offers a number of local attractions, including: railway heritage sites, excursion trains, all terrain vehicle trails, scenic byways and activities related to the glassmaking industry.

Railway Heritage

The railroad played a significant role in the advancement of the coal mining industry in southern West Virginia. It is no surprise that remnants of railway heritage can be found throughout the NCHA. The NCHA offers excursion train rides and tours, renovated depots, museums and railroad equipment for visitors to enjoy. Table 3.6 provides a brief description of several of these opportunities.

Attraction	Type of Attraction	Description
Mountain State "New River Gorge" Mystery Train Tour	Excursion Train	Excursion train to events, activities and destinations in the area.
New River Excursion Train	Excursion Train	Operated by the Collis P. Huntington Railroad Historical Society in cooperation with Amtrak.
Cardinal	Passenger Train	Amtrak passenger train that passes through the area.
Bramwell Depot	Depot	Complete reconstruction; Coal Heritage Trail's Southern Interpretative Center.
Gauley Bridge Depot	Depot	Reburished for town's city hall.
Thurmond Depot	Depot	Renovated by NPS for visitor center.
Historic Old Virginian Railway Caboose	Museum	Princeton; restored caboose.
Chief Logan Locomotive Display	Museum	Chief Logan State Park; restored locomotive.
C&O Heritage Museum	Museum	Huntington
Heritage Village	Museum	Huntington
Huntington Railroad Museum	Museum	Huntington
Hinton Railroad Museum	Museum	Hinton
Old Virginian Railway Caboose	Museum	Mullens; restored caboose.

West Virginia Division of Tourism, 2001.

Scenic Byways

The State of West Virginia has a wealth of scenic vistas, which may explain why there are four nationally designated byways, 11 state-designated byways and ten state-designated backways within its boundaries. Three of these byways and backways – a state backway located principally in the New River Gorge Recreation Area, and two nationally designated byways, the Coal Heritage Trail and the Midland Trail – cross the NCHA. These byways and backways are an excellent way to view the landscape and access other historic and cultural resources within the NCHA.

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All Terrain Vehicle (ATV) Trails

A new recreational activity that is rapidly gaining popularity is all terrain vehicle (ATV) trail riding. The NCHA has one of the best facilities – The Hatfield McCoy Trails – developed by the Hatfield McCoy Recreation Authority and located in Mingo and Logan Counties. The 300 miles of trails were created for ATVs, dirt bikes, and mountain bikes and additional trails are being developed.

Glassmaking

West Virginia has been home to over 500 glass factories, which have produced a wide range of glass products from window panes to art glass. West Virginia was originally “attractive to manufacturers because it offered great quantities of silica sand, stone and other chemical compounds necessary to produce glass.”⁴ Glassmakers of West Virginia utilized these resources and the transportation network of rivers and railroads throughout the state to build the glass industry. There are several opportunities to visit attractions related to this industry within the NCHA.

Visitor Centers

The West Virginia Division of Highways (WVDOH); the West Virginia Parkways, Economic Development and Tourism Authority (WVPEDTA); and the NPS maintain visitor centers in the NCHA.

WVDOH Welcome Centers within the NCHA are located near Huntington along I-64, and along I-77 near Princeton.

WVPEDTA maintains several tourist information centers and travel plazas along the West Virginia Turnpike. WVPEDTA information centers within the NCHA are located along I-77 near Bluestone State Park and at Tamarack outside of Beckley.

The NPS maintains visitor centers within the boundaries of its recreation areas. The NPS operates visitor centers at Canyon Rim just northeast of Fayetteville along US 19, and at the Thurmond Depot in Thurmond. An additional NPS visitor center is currently being constructed along I-64 at the Sandstone Exit.

⁴ West Virginia Division of Tourism, West Virginia Tourism Wild & Wonderful website, <http://www.callwva.com>, November 2001.

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3.3 SOCIOECONOMIC ENVIRONMENT

Population

Over the last century the State of West Virginia and the NCHA have experienced both moderate growth and decline, mostly as a result of the boom and bust cycle of the coal mining industry.

In 1900, the total population of the NCHA was 190,217 persons. The area's population more than tripled by 1950 (714,043), but has since declined to 487,000 in 2000. Similar to the total population of the NCHA, population levels in nine of its 11 counties peaked in 1950 at the height of the coal industry. The exceptions were Wayne and Summers Counties, which are part of the "Peripheral Area" of the NCHA and substantially attribute their economic and population growth to resources other than the coal mining industry.

AREA NAME	1990 Population	2000 Population	% Decline or Growth
United States	248,709,873	281,421,906	13.2%
West Virginia	1,793,477	1,808,344	0.8%
Boone	25,870	25,535	-1.3%
Cabell	96,827	96,784	-0.04%
Fayette	47,952	47,579	-0.8%
Logan	43,032	37,710	-12.4%
McDowell	35,233	27,329	-22.4%
Mercer	64,980	62,980	-3.1%
Mingo	33,739	28,253	-16.3%
Raleigh	76,819	79,220	3.1%
Summers	14,204	12,999	-8.5%
Wayne	41,636	42,903	3.0%
Wyoming	28,990	25,708	-11.3%
NCHA Total	509,282	487,000	-4.4%

U.S. Census Bureau, 1990 and 2000 Censuses.

More recently, total population of the NCHA has declined almost 4.5 percent between 1990 and 2000. In comparison, the population of the State of West Virginia grew by less than one percent, and the United States grew by 13.2 percent during the same time period. Table 3.7 illustrates recent population change for each of the 11 counties, the NCHA, West Virginia and the United States.

Economy

Chief industries within the NCHA include services, government and retail trade, although, mining is still an important part of the region's economic identity. Table 3.8 illustrates earnings by major industry. The service industry is the largest industry by earnings for the nation, state and NCHA. The mining industry within the NCHA accounts for over 50 percent of the earnings for the industry sector within the state and 12.5 percent of the NCHA's total earnings, indicating that the region continues to be a top producer of coal.

Per capita income is a leading indicator of economic stability within a region. In 1997, the average per capita personal income for the NCHA was \$17,993, which was slightly less than the state average for the same year (\$18,724), and significantly less than the nation's average of \$25,427. This average income for the

MAJOR INDUSTRY SECTOR	United States	West Virginia	NCHA
Farm	0.7%	0.0%	-0.1%
Agricultural Services	0.6%	0.3%	0.2%
Mining	0.8%	5.6%	12.5%
Construction	4.9%	5.2%	4.7%
Manufacturing	14.4%	13.0%	7.7%
Durable Goods	5.4%	5.8%	1.8%
Non Durable Goods	9.0%	7.2%	5.8%
Transportation	5.8%	6.6%	7.4%
Wholesale Trade	5.3%	4.2%	4.5%
Retail Trade	7.5%	8.3%	9.5%
FIRE	7.7%	3.6%	3.1%
Services	24.3%	21.7%	23.8%
Government	13.7%	18.6%	19.1%

County Data Profiles, Bureau of Business and Economic Research, West Virginia University, 2000.

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NCHA was 70.8 percent of the national per capita income and 96.1 percent of the state per capita income in 1997. While the nation's per capita income grew by 28.1 percent between 1990 and 1997, many of the counties within the NCHA experienced a greater than 30 percent gain in per capita income. Although the NCHA is increasing its per capita income at a faster rate than the nation, the region's income levels are still well below other regions of the United States. (See Table 3.9)

Housing

For the most part, the NCHA has not kept pace with the state or nation in terms of housing unit growth. Between 1990 and 2000, the nation's housing stock increased 13.3 percent, and the state's housing stock increased 8.1 percent, while the NCHA's housing stock grew by only 3.9 percent. Within the NCHA, individual counties varied between 12.5 percent growth (Wayne County) and 11.4 percent decline in housing units (McDowell County).

A greater percentage of housing units are owner occupied within the NCHA (66.2 percent) compared to the nation as a whole (60.2 percent). However, there are also a greater percentage of housing units standing vacant (11.8 percent). (See Table 3.10)

In 2000, the average household size and average family size within the NCHA closely compared to that of the state (approximately 2.4 and 2.9, respectively), while the average size of households (2.59 persons) and families (3.14 persons) within the nation were higher.

AREA NAME	1990	1997	% Change 1990 - 1997
United States	\$ 19,584	\$ 25,427	28.1%
West Virginia	\$ 14,176	\$ 18,724	32.1%
Boone	\$ 13,445	\$ 17,735	31.9%
Cabell	\$ 16,170	\$ 21,469	32.8%
Fayette	\$ 11,590	\$ 15,961	37.7%
Logan	\$ 12,336	\$ 16,383	32.8%
McDowell	\$ 10,218	\$ 13,482	31.9%
Mercer	\$ 14,660	\$ 19,423	32.5%
Mingo	\$ 12,328	\$ 15,923	29.2%
Raleigh	\$ 13,816	\$ 18,421	33.3%
Summers	\$ 9,892	\$ 13,621	37.7%
Wayne	\$ 11,740	\$ 14,945	27.3%
Wyoming	\$ 10,742	\$ 13,816	28.6%
NCHA Average	\$ 13,607	\$ 17,993	32.2%

Bureau of Business and Economic Research, West Virginia University, 1999; U.S. Bureau of Economic Analysis, 2001; and PB calculations.

AREA NAME	% Owner Occupied	% Renter Occupied	% Vacant	Total
United States	60.2%	30.8%	9.0%	100.0%
West Virginia	65.6%	21.6%	12.8%	100.0%
Boone	70.2%	18.7%	11.1%	100.0%
Cabell	58.3%	32.0%	9.7%	100.0%
Fayette	67.7%	20.0%	12.4%	100.0%
Logan	68.0%	20.5%	11.5%	100.0%
McDowell	65.8%	16.4%	17.8%	100.0%
Mercer	67.6%	20.4%	12.1%	100.0%
Mingo	68.1%	19.5%	12.4%	100.0%
Raleigh	68.1%	21.0%	10.9%	100.0%
Summers	59.7%	15.8%	24.6%	100.0%
Wayne	70.5%	19.7%	9.8%	100.0%
Wyoming	74.5%	14.9%	10.6%	100.0%
NCHA Total	66.2%	21.9%	11.8%	100.0%

U.S. Census Bureau, 2000 Census.

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Education

Educational attainment within the NCHA is low compared to the nation or state. West Virginians, including residents of the NCHA, are less likely to have an advanced degree compared to the national average. Approximately 11 percent of residents over the age of 25 years within the NCHA have a Bachelor degree or higher, which is slightly lower than the statewide average (12.3 percent) and far lower than the nationwide average (20.3%). In addition, low high school graduation rates are evident in southern West Virginia. Almost 40 percent of NCHA residents have not received a high school diploma, with variances as wide as approximately 30 percentage points between individual counties (McDowell County: 57.7 percent and Cabell County: 28.1%). Cabell County tends to have greater educational attainment than the rest of the NCHA most likely because it is an urban center and houses several institutions of higher education, including Marshall University. Table 3.11 illustrates educational attainment.

AREA NAME	Less Than High School Diploma	High School Graduate	Some College, No Degree	Associates Degree	Bachelor's Degree	Graduate or Professional Degree
United States	24.8%	30.0%	18.7%	6.2%	13.1%	7.2%
West Virginia	34.0%	36.6%	13.2%	3.8%	7.5%	4.8%
Boone	45.9%	35.9%	9.7%	2.0%	3.9%	2.6%
Cabell	28.1%	31.5%	17.0%	4.5%	11.0%	7.9%
Fayette	42.9%	34.1%	11.0%	3.2%	5.9%	2.9%
Logan	46.6%	32.8%	11.1%	3.3%	3.2%	3.1%
McDowell	57.7%	28.2%	7.9%	1.6%	2.7%	1.9%
Mercer	36.9%	33.6%	13.7%	4.2%	7.3%	4.3%
Mingo	49.6%	31.5%	9.6%	2.6%	3.6%	3.0%
Raleigh	36.8%	34.0%	13.8%	4.6%	6.6%	4.1%
Summers	42.0%	35.8%	10.9%	2.7%	5.1%	3.4%
Wayne	36.9%	37.6%	13.5%	2.9%	5.1%	3.9%
Wyoming	47.0%	35.5%	9.1%	2.2%	3.4%	2.8%
NCHA Total	39.9%	33.4%	12.7%	3.5%	6.3%	4.3%

US Census Bureau, 1990 Census and PB calculations.

Employment

Data from the West Virginia Bureau of Business and Economic Research shows that unemployment rates vary by county within the NCHA, but as a whole, the area has consistently higher unemployment rates than the nation and the state. Although the state and the NCHA have experienced improvements in their unemployment rates, these rates are still relatively high compared to the national average. Table 3.12 shows that the NCHA unemployment rate was 7.9 percent in 1999, while the state and nation had 6.6 percent and 4.2 percent unemployment rates, respectively.

Major employment sectors within the NCHA include services (30.0 percent), retail trade (20.2 percent), and government (17.4 percent). The mining industry still employs 5.9 percent of the area's workers or a total of 12,490 individuals. The employment breakdown by industry is shown in Table 3.13.

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AREA NAME	1980	1990	1999
United States	7.3%	5.6%	4.2%
West Virginia	9.4%	8.4%	6.6%
Boone	7.0%	9.3%	11.2%
Cabell	9.3%	6.5%	5.1%
Fayette	14.2%	11.1%	9.9%
Logan	8.6%	11.2%	12.2%
McDowell	13.0%	13.1%	14.5%
Mercer	9.2%	8.1%	4.9%
Mingo	9.6%	10.7%	15.1%
Raleigh	9.9%	8.8%	7.3%
Summers	13.1%	9.7%	9.2%
Wayne	9.5%	8.3%	6.2%
Wyoming	12.5%	12.0%	10.7%
NCHA Total	10.1%	9.0%	7.9%

County Data Profiles, Bureau of Business and Economic Research, West Virginia University, 2000; and PB calculations.

MAJOR INDUSTRY SECTOR	United States	West Virginia	NCHA
Farm	2.0%	2.6%	1.0%
Agricultural Services	1.3%	0.8%	0.4%
Mining	0.5%	3.3%	5.9%
Construction	5.5%	5.7%	5.4%
Manufacturing	12.2%	9.9%	6.4%
Transportation	4.8%	5.0%	5.7%
Wholesale Trade	4.6%	3.8%	4.0%
Retail Trade	16.7%	18.2%	20.2%
FIRE	7.7%	4.8%	4.0%
Services	31.1%	28.8%	30.0%
Government	13.7%	17.1%	17.1%

County Data Profiles, Bureau of Business and Economic Research, West Virginia University, 2000.

Environmental Justice Populations

Disadvantaged Populations

Poverty levels have historically been high throughout the Appalachian Mountain region; the same is true within the NCHA.

In 1998, the U.S. Census Bureau calculated the average poverty threshold for a family of four at \$16,660, a 31.5 percent increase since 1989 (\$12,674). In 1989, the percentage of persons below the poverty line for counties within the NCHA ranged from 37.7 percent in McDowell County to 19.1 percent in Cabell County. Similarly, in 1998, percentage below poverty estimates for NCHA counties ranged from 29.8 percent in McDowell County to 16.6 percent in Cabell County, all well above the national averages. An average of 20 percent of the total population within the NCHA lived below the poverty line in 1998, a decrease from 24 percent in 1989. The 1998 percentage is well above the state (16.8 percent) and national (12.7 percent) averages for the same year.⁵ Table 3.14 compares the percentage of persons below poverty in 1989 and 1998.

Poverty is a serious problem, particularly in southern West Virginia. Specifically, within the seven counties which have over 20 percent of their populations living below the poverty line. (See Table 3.14) The five counties considered “core coal mining counties” each have between 20 percent and 30 percent of their populations living below poverty.⁶

⁵ The 2000 U.S. Census economic data has not yet been released to the public. For comparison purposes, the U.S. Census Bureau’s poverty estimates for the NCHA counties and State of West Virginia in 1998 will be used.

⁶ Core coal mining counties are defined in *Historical Context for the Coal Heritage Study*, as Boone, Logan, McDowell, Mingo and Wyoming.

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TABLE 3.14
Percentage of Total Population Below Poverty - 1989 to 1998

AREA NAME	1989	1998*
United States	13.1%	12.7%
West Virginia	19.7%	16.8%
Boone	27.0%	20.4%
Cabell	19.1%	16.6%
Fayette	24.4%	21.8%
Logan	27.7%	22.4%
McDowell	37.7%	29.8%
Mercer	20.4%	18.9%
Mingo	30.9%	24.4%
Raleigh	19.9%	17.6%
Summers	24.5%	22.7%
Wayne	21.8%	17.8%
Wyoming	27.9%	22.2%
<i>NCHA Average</i>	24.0%	20.0%

* Estimated by the U.S. Census Bureau

U.S. Census Bureau, 1990; U.S. Census Bureau, Small Areas Income & Poverty Estimates, August 2001; and PB calculations.

Minority Populations

In 2000, the population of the NCHA was 93.8 percent White and 4.7 percent Black, with much smaller proportions of other races and ethnic groups. These proportions are similar to the State of West Virginia, however, they differ greatly from the nation. Although ethnic minorities migrated to the region during the coal industry boom, many were the first to out migrate when mechanization of the mines decreased the number of available jobs in southern West Virginia. Table 3.15 illustrates the race and ethnicity of the NCHA compared to West Virginia and the United States.

TABLE 3.15
Population by Race and Ethnicity - 2000

RACE OR ETHNIC GROUP	United States	West Virginia	NCHA
White	75.1%	95.0%	93.8%
Black or African American	12.3%	3.2%	4.7%
American Indian or Alaska Native	0.9%	0.2%	0.2%
Asian	3.7%	0.5%	0.4%
Native Hawaiian or Other Pacific Islander	0.1%	0.0%	0.0%
Other Race	5.5%	0.2%	0.1%
Two or More Races	2.4%	0.9%	0.8%
Total	100.0%	100.0%	100.0%

U.S. Census Bureau, 2000 Census.

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3.4 NATURAL RESOURCES

Geology and Soils

The majority of the NCHA lies within the Appalachian Plateau physiographic province, with the exception of Mercer and Summers Counties, which mostly lie within the Ridge and Valley physiographic province. These provinces are separated by the Allegheny Front, an area characterized by an abrupt change in topography.

The Appalachian Plateau physiographic province is a deeply dissected plateau underlain by sedimentary formations. The terrain is rugged with very steep ridges and narrow valleys. This topography is a result of the extensive dissection of the plateau by the numerous streams in the area and is illustrative of a mature stage of erosional development. The rock strata are relatively flat with a slight easterly tilt. The age of the rocks within this province is predominantly Pennsylvanian, which is considered to be approximately 290 to 320 million years old. Bedrock generally consists of interbedded sandstone, siltstone, shale and coal. Large deposits of minable, low sulfur coal are located within this province.

The Ridge and Valley physiographic province is characterized by a series of long, linear parallel valleys separated by steep to rounded ridges that trend southwest to northeast. The ridges and valleys are a result of folding and faulting. This province is not as rugged as the Appalachian Plateau province that lies to the west. The rocks of the province range in age from late Precambrian to early Mississippian and are primarily sandstone, shale and carbonate. Some coal-bearing beds are present in the area.

Elevations within the project area range from approximately 515 feet above sea level to 3,945 feet above sea level. The highest point is located at Keeney Knob in northeastern Summers County. The primary soil associations within the NCHA are: Dekalb-Gilpin-Ernest, Dekalb-Pineville-Guyandotte, Gilpin-Upshur, Calvin highbase substratum-Berks-Gilpin, Pineville-Berks, Berks-Pineville, Matewan-Highsplint-Guyandotte, Matewan-Pineville-Guyandotte, Gilpin-Upshur-Beech and Dekalb-Latham-Gilpin. In most of the NCHA, the risk of soil erosion is high and is considered a serious problem.

Floodplains

Floodplains within the NCHA tend to be narrow due to the dissected topography of the area. Some wider floodplains do exist, most notably along the Ohio and Mud rivers in Cabell County. The major floodplains within the NCHA are associated with the following rivers/creeks: Clear Fork, Greenbrier River, Guyandotte River, Mud River, Ohio River, Tug Fork and Twelvepole Creek. Information on Special Flood Hazard Areas (SFHAs) within the NCHA was obtained from the Federal Emergency Management Agency's (FEMA) Q3 Flood Data. SFHAs are defined as areas that are subject to inundation by a flood that has a one percent or greater chance of being equaled or exceeded during any given year. This type of flood is commonly known as the 100-year flood. The acreage of SFHAs for the counties within the NCHA is shown in Table 3.16. Q3 Flood Data was not available for the following counties: Boone, Fayette, Mercer and Raleigh.

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TABLE 3.16
Acres within Special Flood Hazard Areas

<i>County</i>	<i>Acres within Special Flood Hazard Areas</i>	<i>Percentage</i>
Cabell	15,616	8.5
Logan	5,568	1.9
McDowell	4,544	1.3
Mingo	7,552	2.8
Summers	4,800	2.0
Wayne	21,760	6.6
Wyoming	8,832	2.8

Aquatic Habitat

High Quality Streams

High quality streams provide “significant or irreplaceable fish, wildlife and recreational resources” and are of vital concern to the West Virginia Division of Natural Resources (WVDNR). They are defined as: (1) all streams which are stocked with trout or that contain native trout populations and (2) warm water streams over five miles in length with desirable fish populations and public utilization thereof. Of West Virginia’s 8,000 streams, only 947 (11.8 percent) are classified as high quality. Of these, 94 (1.2 percent) are located within the NCHA. Within the NCHA, Fayette County has the highest number of high quality streams (23) and Logan County has the least (five). A listing of high quality streams within the NCHA can be found in Appendix G.

Wetlands

According to the U.S. Geological Survey’s *National Water Summary on Wetland Resources*, wetlands constitute less than one percent of West Virginia’s surface area. A small percentage of these are located within the NCHA. Due to the dissected nature of the terrain within most of the NCHA, wetlands are generally limited to narrow floodplains, seepage areas and springs.

According to the National Resources Conservation Service (NRCS), four of the counties within the NCHA do not have soils that are classed as hydric (a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic [oxygen-lacking] conditions that favor the growth and regeneration of hydrophytic vegetation). The presence of hydric soils is one of three wetland indicators (hydric soils, hydrophytic vegetation, and hydrology) used to delineate wetlands. The counties without hydric soils are: Boone, Logan, McDowell and Mingo.

Water Quality

Due to the general nature of the NCHA Strategic Management Plan, water quality readings for the numerous perennial streams within the proposed management area have not been taken. Instead, this discussion is based on the broader topic of watershed health. Projects that arise from the Plan will entail more detailed studies of water quality issues, as necessary.

The U.S. Environmental Protection Agency (USEPA) has developed the Index of Watershed Indicators (IWI), which characterizes the condition and vulnerability of water resources nationally. The IWI evaluates two sets of indicators: one for the condition of the watershed and

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one for its vulnerability. The condition indicators are designed to describe existing water quality and include things such as: the percentage of waters within the watershed that meet all uses established for those waters as reported to EPA under section 305(b) of the Clean Water Act, fish and wildlife consumption advisories, contaminated sediments, ambient water quality and loss of wetlands. The vulnerability indicators are designed to describe where pollution discharges and other activities put pressure on a watershed. The indicators include things such as: aquatic/wetland species at risk, pollutant loads discharged in excess of permitted levels, the potential for pollution from urban and agricultural runoff and changes in population. The IWI gives a watershed a score from 1 to 6. A score of one indicates watersheds with better water quality and lower vulnerability to stressors. These watersheds largely meet State designated uses and other indicators of watershed condition show few problems. Pollutants and/or other stressors are low and there is a lower potential for future declines in aquatic health. A score of six indicates watersheds with more serious water quality problems and a higher vulnerability to stressors. These watersheds have aquatic conditions well below State water quality goals and other indicators of condition show serious problems. These are watersheds where data suggest significant pollution and other stressors and, therefore, a higher vulnerability to declines in aquatic health. These watersheds have the greatest need for actions to protect quality and prevent decline.

The 11-county NCHA crosses 13 of West Virginia's 32 major watersheds. Five of the watersheds received an IWI score of 1. Five of the watersheds received an IWI score of 3, which indicates watersheds with less serious water quality problems and lower vulnerability to stressors. These watersheds have aquatic conditions below State water quality goals and have problems revealed by other indicators. Vulnerability indicators are low and there is a lower potential for future declines in aquatic health. Two of the watersheds had an IWI score of 5, which indicates watersheds with more serious water quality problems and with a lower vulnerability to stressors. These watersheds have aquatic conditions well below State water quality goals and have serious problems exposed by other indicators. Vulnerability indicators are low and there is a lower potential for future declines in aquatic health. One of the watersheds that crosses the NCHA has been rated as having insufficient data.

Counties in which there are portions of watersheds with IWI scores of 1 are located in the eastern portion of the NCHA: Fayette, McDowell, Mercer, Raleigh, Summers and Wyoming. Counties in which there are portions of watersheds with IWI scores of 5 are located in the western portion of the NCHA: Boone, Cabell, Logan, Mingo and Wayne. (See Table 3.17)

TABLE 3.17
NCHA Watersheds and IWI Scores

<i>Watershed</i>	<i>Counties Crossed by Watershed</i>	<i>IWI Score</i>
Big Sandy River	Wayne	3
Coal River	Boone, Logan, Raleigh, Wyoming	3
Gauley River	Fayette, Summers	1
Greenbrier River	Summers	1
Lower Guyandotte River	Boone, Cabell, Logan, Mingo, Wayne	5
Upper Guyandotte River	Boone, Logan, McDowell, Mercer, Mingo, Raleigh, Wyoming	Incomplete data
Lower Kanawha River	Cabell	5

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TABLE 3.17 Continued

<i>Watershed</i>	<i>Counties Crossed by Watershed</i>	<i>IWI Score</i>
Upper Kanawha River	Boone, Fayette, Raleigh	3
Lower New River	Fayette, Raleigh, Summers	1
Upper New River	McDowell, Mercer, Raleigh, Summers, Wyoming	1
Lower Ohio River	Cabell, Wayne	3
Twelvepole Creek	Cabell, Logan, Mingo, Wayne	3
Tug Fork River	Logan, McDowell, Mercer, Mingo, Wayne, Wyoming	1

Terrestrial Habitat

The composition and character of the natural communities within the NCHA have been influenced by regional topography, hydrologic conditions, geology and human activity. The general terrain is rugged with narrow valleys and steep slopes. In a large portion of the study area, few streams have developed flat-bottomed valleys.

Most level areas have been cleared and are used for agriculture, livestock or residential/commercial development. Mining and timbering practices have afforded land in much of the area. Forest in most of the NCHA has been cut over at least once. Second growth timber is generally of average or low quality. The rockiest and steepest land is generally the least disturbed.

The majority of the woodland within the NCHA consists of oak-hickory forests, composed principally of white oak (*Quercus alba*), red oak (*Quercus rubra*), black oak (*Quercus velutina*), and hickory (*Carya spp.*) are the major species. Other species include beech (*Fagus grandifolia*), black walnut (*Juglans nigra*), basswood (*Tilia heterophylla*) and cucumbertree (*Magnolia acuminata*). Cove hardwoods include hemlock (*Tsuga canadensis*), yellow poplar (*Liriodendron tulipifera*), buckeye (*Aesculus octandra*), white ash (*Fraxinus americana*) and sugar maple (*Acer saccharum*).

Surface mining within the NCHA has increased the extent of pioneer species and decreased the extent of climax species. Pioneer species are common in disturbed areas and include: sassafras (*Sassafras albidum*), sourwood (*Oxydendrum arboreum*), dogwood (*Cornus florida*), sumac (*Rhus spp.*), black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), black locust (*Robinia pseudoacacia*), redbud (*Cercis canadensis*) and pine (*Pinus spp.*). Some reclaimed mined areas have been revegetated with grasses, legumes and tree seedlings.

Wildfires occur frequently in the area and are considered a serious problem.

Table 3.18 shows the percentage of each county that is considered woodland.

**TABLE 3.18
Woodland**

<i>County</i>	<i>Percentage of Woodland</i>
Boone	90
Cabell	72
Fayette/Raleigh	83
Logan/Mingo	89
McDowell	91
Mercer/Summers	71
Wayne	84
Wyoming	93

Affected Environment

Woodland animal species are dominant since little open land habitat exists within the NCHA. Woodland species such as gray squirrel, ruffed grouse, wood thrush, red-eyed vireo, white-tailed deer, raccoon and gray fox are common. Wild turkey populations are increasing. In some areas, black bear populations are sufficient enough to provide for a limited hunting season. The European wild boar was stocked in Boone County in the late 1960s and can now be found in Logan, Wyoming and Raleigh counties, as well. Elk have been established in eastern Kentucky and are said to be found in Mingo County. According to the NRCS, sightings of mountain lions are also increasing.

Species that prefer open land habitat tend to be limited in numbers and distribution. Open land species in the area include: bobwhite quail, meadowlark, field sparrow, cottontail rabbit, red fox, woodchuck and mourning dove.

Waterfowl and other species that depend on wetland habitats are generally limited in number and distribution. Exceptions include areas along Guyan Creek, Guyandotte River and the Ohio River in Cabell County. Large numbers of Canada geese in Cabell County are mainly a result of WVDNR's transplant program. Additionally, the increase in populations of several waterfowl species in Wayne County seem to coincide with the construction of Beech Fork and East Lynn lakes.

Threatened and Endangered Species

Federally Listed and Proposed Endangered or Threatened Species

Six federally listed endangered species and one federally listed threatened species are known to occur within the NCHA. According to the West Virginia Natural Heritage Division (WVNHD), one species, the tubercled blossom pearly mussel, is thought to be extinct. Table 3.19 lists the known federally listed species for the NCHA.

TABLE 3.19
Federally-listed Species

<i>Species</i>	<i>Common Name</i>	<i>Type</i>	<i>Federal Status</i>	<i>County</i>
<i>Lampsilis abrupta</i>	Pink Mucket	Mollusc	Endangered	Cabell, Fayette
<i>Cyprogenia stegaria</i>	Fanshell	Mollusc	Endangered	Fayette
<i>Epioblasma torulosa rangiana</i>	Northern Riffleshell	Mollusc	Endangered	Fayette
<i>Epioblasma torulosa torulosa</i>	Tubercled Blossom	Mollusc	Endangered	Fayette
<i>Trifolium stoloniferum</i>	Running Buffalo Clover	Plant	Endangered	Fayette
<i>Myotis sodalis</i>	Indiana Bat	Mammal	Endangered	Mercer
<i>Spiraea virginiana</i>	Virginia Spiraea	Plant	Threatened	Fayette, Mercer, Raleigh, Summers

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Mollusc Species: Three freshwater mollusc species that have been listed by the USFWS as endangered may occur within the NCHA. Freshwater mussels live on the bottom of free-flowing, well-oxygenated streams and rivers in a variety of substrates: sand, gravel, cobble and mixed materials. The pink mucket and fanshell live in sediment at the bottom of large rivers. Within the NCHA, the pink mucket is known to occur in the Ohio River (Cabell County) and the fanshell is known to occur in the Kanawha River (Fayette County). The northern riffleshell prefers swift flowing riffles and runs of smaller streams. Only two specimens of northern riffleshell have been reported in West Virginia.

Plant Species: One plant species that has been listed by the USFWS as endangered may occur within the NCHA. Another has been listed as threatened. Running buffalo clover is listed as an endangered species. According to the WVNHD, it was thought to be extinct in West Virginia, and possibly its entire range, until it was rediscovered in the New River Gorge in 1983. This perennial plant appears to prefer habitats with filtered sunlight that have had some kind of recent disturbance. It has been found along old roads, skid rows, old game trails and other disturbed areas.

Virginia Spiraea, a colonial shrub that ranges in height from three to seven feet, is classified as a federally threatened species. Its habitat is usually rocky, flood scoured banks of high gradient streams or rivers.

Mammal Species: One species of mammal, the Indiana bat, that might occur within the NCHA has been listed as endangered by the USFWS.

West Virginia Critically Imperiled and Imperiled Species

As of November 2001, 120 critically imperiled species and 93 imperiled species may be found in the NCHA. The list is located in Appendix H.

Critically imperiled species are defined as “five or fewer documented occurrences, or very few remaining individuals within the state.” Imperiled species are defined as “six to 20 documented occurrences, or few remaining individuals within the state.”

The majority of the critically imperiled and imperiled species within the NCHA are plants.

Ecologically Critical Areas and Other Unique Natural Features

Ecologically Critical Areas

The New River has several unique riparian communities, such as flatrock areas, associated with it that are considered ecologically critical areas. In southern Mercer County areas of karst geology are considered ecologically critical areas.

Unique Natural Features

Pinnacle Rock, a unique geologic feature, is located in Pinnacle Rock State Park along U.S. Route 52 near Bluefield.

Affected Environment

Prime Farmland

According to the U.S. Department of Agriculture, prime farmland is defined as “that land that is best suited to producing food, feed, forage, fiber and oilseed crops.” Prime farmland must have a generally adequate and dependable supply of moisture, favorable temperature and growing-season length, acceptable levels of acidity or alkalinity, few or no rocks, and permeability to air and water. It is not excessively erodible, not saturated with water for long periods, is not flooded during the growing season and generally has a slope of between zero and eight percent.

In the NCHA, Cabell, Summers and Boone counties have the highest percentages of land that is classified as prime farmland. Approximately eight percent (14,730 acres) of the land within Cabell County, approximately four percent (9,770 acres) of the land within Summers County and approximately three percent (8,795 acres) of the land within Boone County is prime farmland. Two percent or less of the land in the other eight counties is classified as prime farmland.

A majority of the prime farmland within the NCHA is located in narrow bands along streams and rivers. In Boone and Cabell counties, prime farmland is located within floodplains. In Cabell County, the largest areas of prime farmland are located along the Mud River and a number of its tributaries. In Boone County, the largest areas of prime farmland are located along the Big Coal River. In Summers County, prime farmland tends to be located on ridgetops and benches.

Air Quality

The USEPA has identified seven criteria air pollutants as being of concern nationwide: carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter smaller than 10 and 2.5 microns (PM₁₀ and PM_{2.5}), sulfur oxides (SO_x), and lead (Pb).

Ambient Air Quality Standards

As required by the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for these seven criteria air pollutants. "Primary" standards have been established to protect the public health. "Secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

Section 107 of the 1977 Clean Air Act Amendment requires the EPA to publish a list of all geographic areas in compliance with the NAAQS, as well as those not in attainment of the NAAQS. Areas not in compliance with the NAAQS are termed nonattainment areas. Areas that have insufficient data to make a determination are unclassified, and are treated as being in attainment areas until proven otherwise. The designation of an area is made on a pollutant-by-pollutant basis. All of the 11 counties that comprise the NCHA are considered in attainment for all criteria pollutants.

Noise Characteristics

Due to the general nature of the NCHA Strategic Management Plan, a detailed noise study for the area within the NCHA has not been performed. Projects that arise from the Plan will be evaluated to determine their noise impact, as necessary.

Affected Environment

National Wild and Scenic Rivers

A National Wild and Scenic River is a free-flowing river or river segment, with outstanding natural, cultural, scenic or recreational value, that has been designated by an act of Congress or the Secretary of the Interior as part of the National Wild and Scenic Rivers System. There are three classifications of river within the National Wild and Scenic Rivers System:

- Wild Rivers
- Scenic Rivers
- Recreational Rivers

Wild rivers are free of impoundments and generally inaccessible except by trail. Their watersheds or shorelines are essentially primitive and the waters are unpolluted. These rivers represent “vestiges of primitive America.” Scenic rivers are free of impoundments and are generally accessible in places by roads. The shorelines or watersheds are still largely undeveloped. Recreational rivers may have undergone some impoundment or diversion and are readily accessible by road or railroad. They may have some development along their shorelines. This classification may include rivers that flow in or near urban areas.

Currently, 168 rivers have been designated in 37 states. In West Virginia, the lower 17 miles of the Bluestone River in Raleigh and Summers counties, which is within the NCHA, has been designated as a National Wild and Scenic River and is currently managed by the NPS.

3.5 LAND USE AND DESIGN OF THE BUILT ENVIRONMENT

The NCHA remained sparsely settled prior to the rise of the coal industry due to its rugged terrain, little or no road access, and lack of naturally navigable waters. It was an area “to be skirted or passed through.” Settlement occurred wherever it could – mainly along narrow stream valleys. Soils were poor in much of the area and generally only supported subsistence agriculture. Land use patterns were historically driven by opportunity and topography, particularly in the core coal mining area. The area was characterized by a lack of land use controls, a tradition that has been maintained for much of the NCHA to this day. Absentee owners own much of the land within the NCHA. Many of the early broad-form deeds, which give the holder the right to remove coal at any time, are in the hands of relatively few individuals and corporations.

During the late 1800s, the coal industry began to boom, resulting in a drastic increase in population as the coal companies brought in laborers to work the mines. The miners needed housing, which was not readily available. As a result, the coal companies built “company towns,” which provided miners with housing, a company store, churches, recreational areas and other facilities. The company towns were located in close proximity to the mine and were laid out in the areas that were left after the siting of the mine works and the railroad siding. The form of the towns was typically long and linear. The company store and any other community facilities were generally located in the center of the town. Housing was segregated, with housing for white mine workers located nearest the work and housing for others located farther away, often in another hollow.⁷ The houses were built close together on very small lots, creating high population densities within very small areas.

⁷ Workman, Michael; *Historical Context for the Coal Heritage Study*, Institute for History of Technology and Industrial Archaeology, West Virginia University, 1991.

Affected Environment

During the 1950s, the coal companies began a massive sell-off of coal town property due to ongoing and projected declines in coal production and profitability. However, the decline occurred much more rapidly than anticipated and resulted in a “great migration” from the coalfields. Many coal towns were abandoned and left to deteriorate.

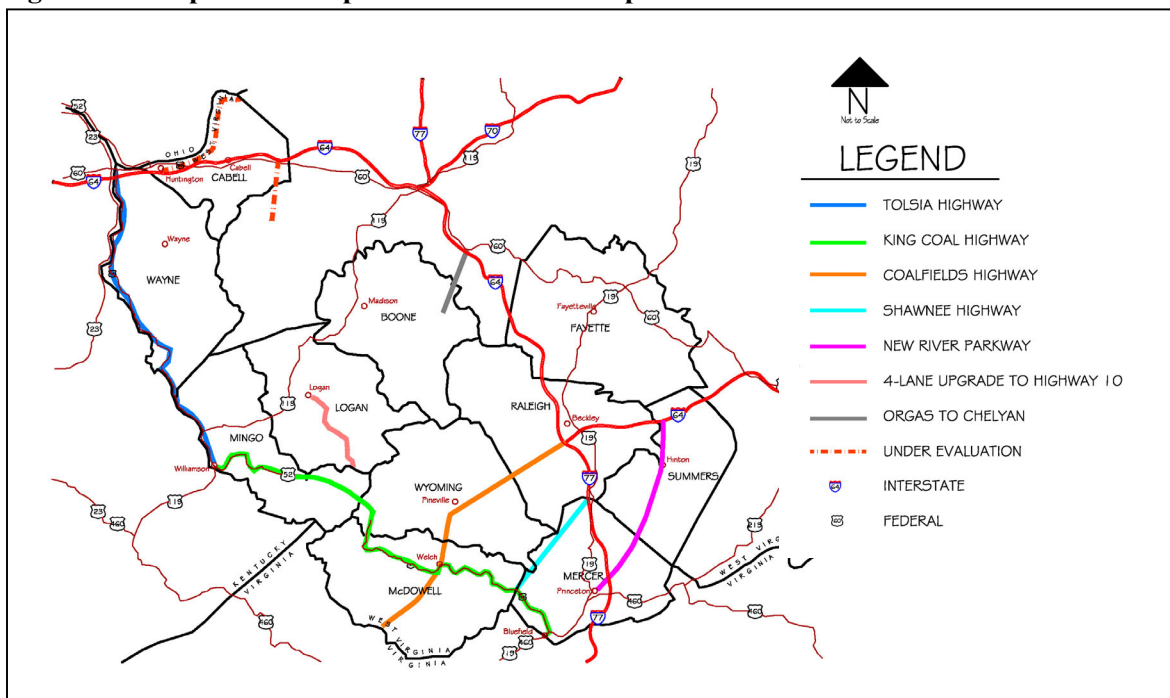
Today, the population within the NCHA has begun to stabilize. Numerous historic coal industry-related resources remain, although many of these resources have been abandoned and are deteriorating. Some towns have vanished completely. The traditional residential settlement patterns are still dominant, primarily because development is constrained by the area’s rugged topography. Much of the land that has been abandoned is reverting to woodland. Recent major roadway improvements, such as Corridor G, along with proposed improvements, such as the Coalfields Expressway and King Coal Highway, will greatly improve access to the NCHA. The improved access will, to some degree, open the area up to new development, which will introduce new land use patterns.

3.6 TRANSPORTATION INFRASTRUCTURE

Roadways

Interstates 64 and 77; U.S. Routes 119, 60, 52 and 19; and numerous state highways connect the NCHA to the rest of the region. This web of highways also connects towns and cities within the region with varying degrees of safety, efficiency and functionality. Figure 3.3 illustrates the major roadways through the region. In addition, the West Virginia Department of Transportation (WVDOT) has planned the following roadway improvements within the NCHA: King Coal Highway, Coalfields Expressway, New River Parkway, Shawnee Highway, and Tolsia Highway. These can also be seen in Figure 3.3.

Figure 3.3 Proposed Transportation Corridor Improvements in the NCHA



Affected Environment

Annual Average Daily Traffic (AADT) volumes on major roadways in the NCHA are monitored by the WVDOT. The AADT represents the average number of vehicles that pass a specific point on any given roadway during a 24 hour period. AADT volumes provide a general idea of how many vehicles are traveling on the interstates and highways within the NCHA. AADT volumes for the Interstate System are higher near urban areas like Beckley (42,500 AADT between Exits 42 and 44 on I-77) and Huntington (42,500 AADT between Exit 11 and Exit 15 on I-64). ADT volumes along other portions of the Interstate System are as low as 10,500 (near Green Sulphur Springs on I-64 in Summers County).

Airports

In addition to the roadways that run through the NCHA, ten airports are located in the area, and serve both general and commercial aviation. In addition, Yeager Airport is located in the capital city of Charleston, approximately 30 miles east of Huntington and 55 miles northwest of Beckley, and is served by several national airlines, including: US Airways, United Express, Comair, Atlantic Southeast, Northwest Airlinck, and Continental. Table 3.20 lists the airports in the region, their location and commercial air service, if applicable.

To better serve the State of West Virginia, the West Virginia Public Port Authority has studied development of a West Virginia Regional Airport. The regional airport would be located equidistance between the state's two major population centers, Huntington and Charleston. First considered in the 1960s, this project was brought forward for further consideration and study during the 1990s. A proposed multi-use airport and commercial-industrial park, it is the hope of many that this could expand economic development opportunities in the region. The regional airport has just received state approval. Next steps include preparation of an Environmental Impact Statement, seeking financial assistance from the Federal Aviation Administration, design, and construction.

County	City	Name of Airport	Commercial Service
Cabell	Huntington	Robert Newlan Field	----
Cabell	Milton	Ona Airport	----
Logan	Logan	Logan County Airport	----
McDowell	Welch	Welch Municipal Airport	----
Mercer	Bluefield	Mercer County Airport	Yes
Mingo	Williamson	Mingo County Airport	----
Raleigh	Beckley	Raleigh County Memorial Airport	Yes
Summers	Pence Springs	Hinton-Alderson Airport	----
Wayne	Huntington	Tri-State Airport	Yes
Wyoming	Pineville	Kee Field/Wyoming County Airport	----

West Virginia Department of Transportation, 2001.

Affected Environment

3.7 VISUAL RESOURCES

Visual Character

The visual character of a landscape is dictated by the order, pattern, scale, texture, color, and diversity of its constituent elements. Attributes of visual character can be described in terms of pattern elements (form, line, color and texture) and pattern character (dominance, scale, diversity, and continuity).⁸

The visual landscape for the NCHA is predominantly comprised of heavily wooded mountainous areas that have been altered by the culture and technology of the coal industry, and the wildfires that frequently occur within the area. Little of the landscape is in pristine form. Mining in the area has changed the shape of the land as well as the land cover. Most of the woodland has been logged at least once. The woodland primarily consists of oak-hickory stands with other hardwoods and mixed pines interspersed. The western two-thirds of the NCHA is much more rugged than the eastern one-third. Numerous narrow stream valleys dissect much of the project area.

Development typical of the coal extraction industry is found throughout the study area, and is particularly evident within the core coal mining counties of Boone, Logan, McDowell, Mingo and Wyoming. Historical evidence of the coal industry, in varying forms of repair and disrepair, such as coal mines, coal company towns, coal camps, tipples, coke ovens and railroads, is scattered throughout the area and creates its own historical landscape. The man-made elements of the area's coal heritage create a unique and powerful pattern on land.

Visually Sensitive Resources

Visually sensitive resources are those resources that are visually important for historic, architectural, recreational or community associations. Significant natural features that are visually important can also be categorized as visually sensitive resources.

Visually sensitive cultural and historic resources include those listed, or determined eligible for listing, on the National Register of Historic Places (NRHP), as well as those deemed locally significant. They represent many aspects of the area's heritage and are not limited to the coal industry. Examples of visually sensitive historic resources within the NCHA that are associated with the coal industry include mines, coal company towns, coal camps, coke ovens, coal company stores and railroads. Many of these resources have been abandoned. Visually sensitive resources associated with other aspects of the area's heritage include prehistoric resources, such as the Cotiga Mound and the Wildcat Branch petroglyphs, and historic resources, such as bridges (i.e. the Baileysville arch bridge), courthouses, libraries, schools, hotels and taverns.

Visually sensitive recreational resources within the NCHA include: two nationally designated scenic byways (Coal Heritage Trail and Midland Trail) and one state designated backway (Glade Creek), numerous state and local parks, the New River Gorge National River Recreation Area (which includes the New River Gorge National River, Grandview National Park, Sandstone Falls, Brooks Falls and the Thurmond Historic District) and the Gauley River National Recreation Area.

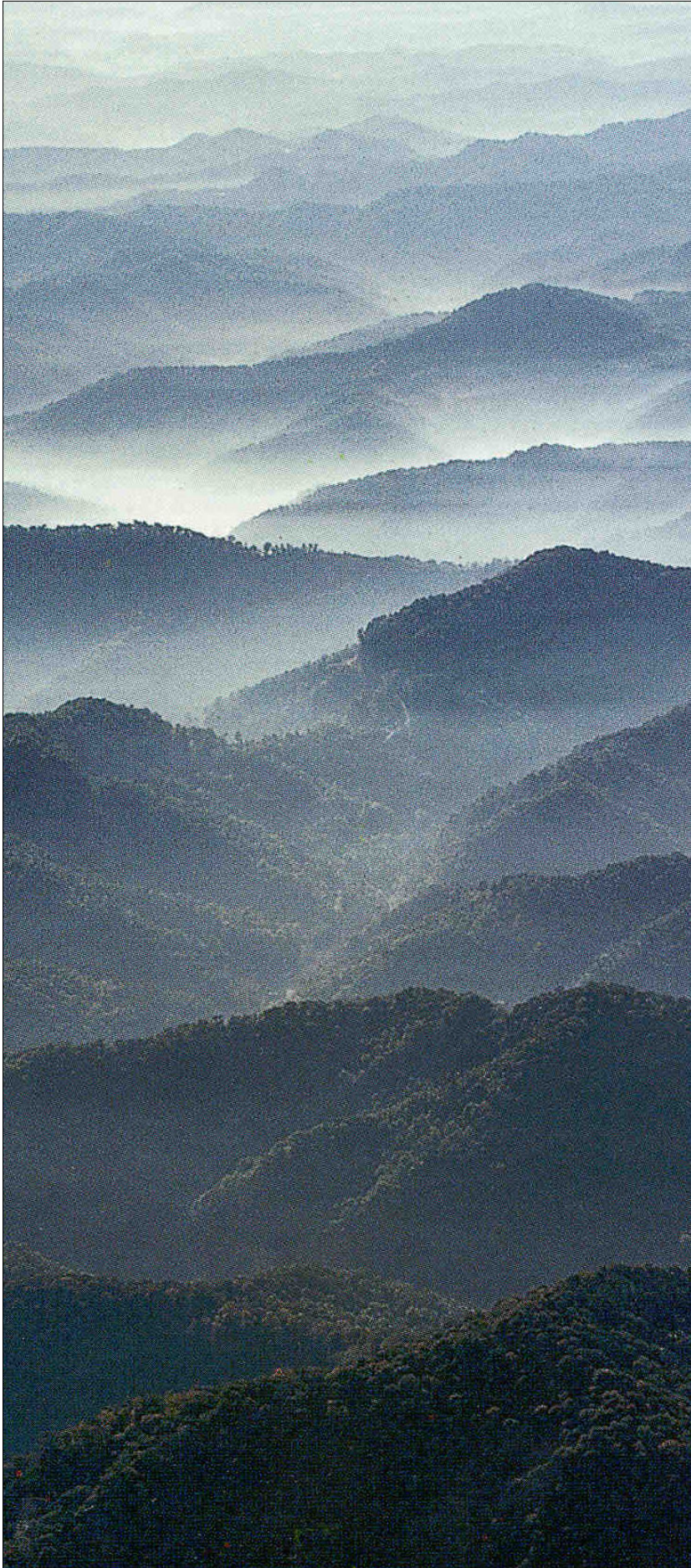
⁸ U.S. Department of Transportation, FHWA; *Visual Impact Assessment for Highway Projects*; Washington, D.C., 1981; 19.

Affected Environment

3.8 HAZARDOUS MATERIALS

The Comprehensive Environmental Response, Compensation and Liability Act Information System (CERCLIS), an EPA database of information on Superfund sites was examined to determine whether any hazardous sites listed on the National Priorities List (NPL) were within the NCHA. No NPL sites are currently listed for the counties within the NCHA.

**CHAPTER IV.
Environmental
Consequences**



Environmental Consequences

4.0 METHODOLOGY FOR ASSESSING IMPACTS

This section assesses overall impacts of the proposed alternatives for managing the NCHA. It is intended to provide the public with broad assessments of impacts, including assessments of the cumulative effects of proposed alternatives. Upon adoption of the selected plan to manage the NCHA, the central organization, in coordination with the NCHA Steering Committee and other interested and affected parties, will prepare detailed plans for implementation of the selected management approach. These actions will be the subject of subsequent environmental reviews and documentation, as necessary, which will provide greater detail and specificity concerning the environmental consequences of the Plan.

4.1 IMPACTS ON CULTURAL RESOURCES

Alternatives A, B, C and D all have the potential to affect cultural resources listed or eligible for listing on the National Register of Historic Places (NRHP). Since a major component of the Plan's mission is the preservation, protection, and interpretation of historic and cultural resources associated with the NCHA, the elements of the plan action alternatives strive to positively affect cultural resources. However, implementation of certain elements of plan alternatives, may adversely affect some NRHP-listed or – eligible resources. The impacts will be more precisely detailed and quantified in subsequent environmental documents that will evaluate impacts of site-specific projects, as necessary.

Any project under any of the alternatives that involves federal funding, involvement, or assistance would trigger the application of the requirements of Section 106 of the National Historic Preservation Act (36 CFR 800). Section 106 seeks to incorporate historic preservation concerns with the planning of Federal undertakings through a process of consultation between the agency official and other parties with an interest in the effects of an undertaking on historic properties.

Impacts of Alternative A

Under Alternative A, the primary responsibility for the preservation and protection of cultural resources would lie with the NCHA central organization. This organization would take an active leadership role in the development of partnerships among public and private organizations and government agencies, thus developing a broader base for preservation efforts. A centralized organization would allow for the development of a holistic plan to meet the preservation needs of the NCHA and would set priorities for funding and implementation. This would beneficially affect the preservation of cultural resources by facilitating the implementation of a greater number of projects.

Alternative A proposes to focus preservation and interpretive efforts on nine Destination Centers. Each Destination Center would direct visitors to other important sites or structures in their areas, which are designated as Experience Zones. This linking of cultural resources within the NCHA would increase the effectiveness of the area's interpretive programs, enhance visitors' understanding and appreciation of the NCHA, and encourage further exploration of the NCHA. The increased visitation would result in increased use and a higher degree of maintenance of cultural resources.

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Benefits to cultural resources at the Destination Centers would include increased levels of preservation funding, increased levels of public awareness and interest in preservation, and increased interest in the identification of adaptive reuses for historic buildings. The focus on preservation in these areas would increase the likelihood that significant buildings in these areas would be preserved.

Impacts of Alternative B

Under Alternative B, the primary responsibility for the preservation and protection of cultural resources would lie with the individual communities within the NCHA. Preservation projects would be community-initiated. The NCHA central organization, while encouraging the development of partnerships among public and private organizations and government agencies, would not take on a leadership role. As with Alternative A, the centralized organization would allow for the development of a holistic plan to meet the preservation needs of the NCHA and would set priorities for funding and implementation.

Alternative B, rather than planning for the development of Destination Centers or Experience Zones, calls for the development of one large-scale visitor center/museum near Beckley. The museum, envisioned as a state-of-the-art interpretive and educational complex, would enhance visitors' understanding and appreciation of the NCHA. Without the linkages provided by the Destination Center and Experience Zones, Alternative B would likely entice fewer visitors into the less accessible coal heritage destinations than either Alternative A or C.

Potential adverse impacts associated with the construction of a new visitor center and museum include the disturbance of any archaeological resources on the site and impairment of the historic integrity of the site. The location and design of the visitor center and museum have not been finalized. Once the project proceeds beyond the concept stage, a detailed analysis will be completed to more precisely evaluate project impacts. The project would be developed under the auspices of the NCHA and would have the technical guidance of preservation professionals and the SHPO. Such guidance would minimize the risk of adverse affects to cultural resources.

Impacts of Alternative C

Since Alternative C combines the elements of Alternatives A and B, its impacts would include those discussed above under those Alternatives. The combination of the development of Destination Centers, Experience Zones and a large-scale visitor center/museum would do more to increase awareness of the history and cultural resources within the NCHA than either Alternative A or B would alone. It would also provide the most efficient method for distributing information and enhancing visitors' understanding and appreciation of the area.

Visitation under this alternative would likely be higher than with the other alternatives. Increased visitation could result in some degradation of cultural resources due to wear and tear.

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Impacts of Alternative D

Alternative D, the No Action Alternative, has no clearly stated goals or strategies and would not set a clear path for preservation. Responsibility for preserving cultural resources would primarily lie with local governments, local organizations and the public. Without the structure, staffing, partnering and community and agency cooperation specified under Alternatives A, B and C, preservation efforts would continue to be fragmented and uncoordinated due to limited technical assistance and inadequate funding. Limited distribution of interpretive information would not reach as wide an audience the other alternatives. Visitation under this alternative is likely to be lower than under any of the other alternatives under consideration.

4.2 IMPACTS ON OPEN SPACE AND RECREATIONAL RESOURCES

Impacts of Alternatives A, B and C

None of the construction activities proposed for completion as part of Alternatives A, B, or C would occur within any designated or critical open space or recreational resources within the NCHA. In this respect, the alternatives would not have an adverse impact on open space and recreational resources. However, each of these alternatives has the potential to affect open space and recreational resources within the NCHA due to increased visitation to the area.

In general, it is anticipated that Alternative C would bring the largest numbers of visitors into the area because of its strong focus on preservation, promotion and marketing of the NCHA, and the development of the nine Destination Centers and visitor center/museum. The Destination Centers and visitor center/museum would link the sites and experiences of the area's coal heritage and encourage further exploration of the NCHA. Once visitors have been attracted to the NCHA, they are more likely to visit nearby state parks and forests, wildlife management areas and other local attractions. Alternatives A and B would also attract visitors to the NCHA, but to a lesser degree.

Impacts of Alternative D

Alternative D, the No Action Alternative, currently has three preservation projects in various states of development: the reconfiguration and upgrade of the Beckley Exhibition Coal Mine, the renovation of the Itmann Company Store and the development of an archives at the Nellis Community Church. These projects would continue and would attract additional visitors to the region, however, to a lesser extent than any of the Action Alternatives. It is anticipated that Alternative D would have a minimal impact on open space and recreational resources within the NCHA.

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4.3 IMPACTS ON THE SOCIOECONOMIC ENVIRONMENT

Alternatives A, B and C and the “No Action” Alternative all have the potential to affect the demographics and economies of the NCHA. Since the three Action Alternatives would stimulate tourism and economic development, and improve the quality of life for the region’s residents, it is envisioned that all three would beneficially affect the economic condition of the NCHA.

However, it is possible that implementation of certain elements of the alternatives may have adverse secondary and cumulative effects. These are discussed in Chapter 8.

Impacts of Alternative A, B, and C

Due to the general nature of the NCHA Strategic Management Plan, detailed impacts of the Action Alternatives on socioeconomic conditions cannot be determined at this time. The effects will be more precisely detailed and quantified in subsequent environmental documents evaluating site-specific projects, as necessary.

In general, preserving historic resources, training local leaders and tourism industry staff, providing technical support, developing cooperative partnerships, interpreting sites and structures, marketing the NCHA, and creating Visitor and Destination Centers, as proposed in Alternatives A and C, would create a demand for new jobs, increase the need for service and retail outlets, and improve the general skill and education level of residents.

Alternative B focuses on the development of a large-scale visitor center/museum near Beckley. Development of this interpretive and educational complex would attract visitors to the NCHA, creating a need for employees at the complex, as well as within other portions of the service industry (i.e. hotels, restaurants, retail outlets, etc.).

Alternative C, since it incorporates Visitor and Destination Centers with the visitor center/museum near Beckley, would create a demand for more new jobs and have a large general beneficial impact on the economy of the region.

Impacts of Alternative D

Under the No Action Alternative, it is anticipated that an increase in visitors would result from improvements to the Beckley Exhibition Coal Mine, the Nellis Archives, and the Itmann Company Store. However, without significant marketing and promotion of the NCHA as planned in the Action Alternatives, improvements would be less than those associated with any of the Action Alternatives.

4.4 IMPACTS ON NATURAL RESOURCES

Impacts of Alternative A

Under Alternative A, construction would be limited to improvements within nine Destination Centers (Beckley, Bramwell, Coalwood, Holden, Itmann, Matewan, Nellis, Thurmond and Welch) geographically distributed throughout the NCHA. The amount of construction at each Center would vary, but generally be limited to renovation of existing structures. Currently, Alternative A calls for physical improvements in two of the Destination Centers: Beckley and Itmann. In Beckley, this includes a physical reconfiguring and upgrade of the Beckley Exhibition Coal Mine complex, improved site access and provision of additional signage. In Itmann, this

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includes renovation of the historic Itmann Company Store. Currently a study is examining the feasibility of renovating the structure. Alternative A also proposes development of a pedestrian and bike pathway from Itmann to Twin Falls Resort and State Park. In the case of the Beckley Exhibition Coal Mine a new parking area and new visitor and interpretation center are proposed. The actual footprints of the new parking area and visitor/interpretation center are not currently known. The effects of these improvements will be detailed in subsequent environmental documents evaluating site-specific projects. In general, it is anticipated that construction in this area would disturb vegetation, but would have little or no effect on biological diversity, wetlands or floodplains. The renovation of the Itmann Company Store would not affect natural resources, since the site is already disturbed. The proposed pedestrian and bike pathway from Itmann to Twin Falls Resort and State Park has the potential to impact natural resources, if it is constructed on a new location. Since the pathway is in a conceptual phase, the precise extent of impacts is unknown. Subsequent environmental evaluation will assess the impacts once the project moves beyond the conceptual stage. Any adverse impacts to soils, vegetation, wildlife, water quality and air quality would be minimal since the Destination Centers are located within existing disturbed areas.

Impacts of Alternative B

Under Alternative B, construction would be limited to the development of one visitor center/museum near Beckley. However, its precise location has not been identified. As such, the effects of the project on natural resources cannot be determined at this time. Effects will be more precisely detailed in subsequent environmental evaluations upon completion of the design and selection of the location of the facility.

Impacts of Alternative C

Alternative C includes the nine Destination Centers to be developed under Alternative A and the visitor center/museum to be developed under Alternative B. The impacts of Alternative C on natural resources would include those discussed above under both of those alternatives.

Impacts of Alternative D

Under Alternative D, the No Action Alternative, construction would be limited to the physical improvements in the Beckley and Itmann Destination Centers: the reconfiguration and upgrade of the Beckley Exhibition Coal Mine and the renovation of the Itmann Company Store. These projects are discussed above under Alternative A. The effects of the Beckley project will be more precisely detailed and quantified in subsequent environmental documents evaluating site-specific projects. In general, it is anticipated that construction in this area would impact disturbed vegetation types but would have little or no effect on biological diversity, wetlands or floodplains. The renovation of the Itmann Company Store would not affect natural resources, since the site is already disturbed.

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4.5 IMPACTS ON LAND USE AND THE BUILT ENVIRONMENT

Impacts of Alternatives A, B and C

Due to the general nature of the NCHA Strategic Management Plan, detailed impacts of the Action Alternatives on land use and the built environment cannot be determined at this time. The effects will be more precisely detailed and quantified in subsequent environmental documents evaluating site-specific projects.

In general, it is anticipated that Alternative B would have the least impact on land use since it only calls for the development of a large-scale visitor center/museum. The visitor center/museum would influence land use immediately surrounding the site, but would not be the catalyst for land use changes throughout the entire NCHA. Alternative A would have greater impacts than Alternative B, but less than Alternative C, since it would have the potential to influence land use within each of the Destination Centers, but is unlikely to influence land use outside those Centers. Alternative C would have the greatest impact on land use and the built environment since it calls for interpretation and preservation efforts at the nine Destination Centers and the development of a large-scale state-of-the-art visitor center/museum that would serve as an interpretive and educational complex. The preservation efforts and investment in the Destination Centers would influence the land use within each of the Centers and the development of the visitor center/museum would influence its surrounding land uses.

Impacts of Alternative D

Alternative D, the No Action Alternative, would not impact land use or the built environment. Reconfiguration and upgrading of the Beckley Exhibition Coal Mine and the renovation of the Itmann Company Store alone would not sufficiently increase visitation and investment to stimulate changes in land use and development patterns in their respective areas.

4.6 IMPACTS ON TRANSPORTATION INFRASTRUCTURE

Impacts of Alternatives A, B and C

Alternatives A, B, and C each specify a different degree of interpretation, preservation, development, and construction within the NCHA. However, none of the three alternatives would include any roadway improvements or modifications to transportation infrastructure in the NCHA. Each alternative would attract visitors to the region, and, therefore, have an impact on existing transportation infrastructure, particularly roadways since they bring approximately 95 percent of visitors into the state.¹ An increase in tourism would result in additional traffic (increased AADT volumes), potential changes in Level of Service (LOS) for roadways near Visitor and Destination Centers, and the visitor center/museum in Beckley, and greater conflict between vehicles and coal trucks. In cases where the roadway capacity has already reached a LOS of F, which is defined as unacceptable congestion or stop-and-go traffic, then additional congestion may trigger roadway improvement projects.

¹ D.K. Shifflet & Associates; Economic Research Associates, 1998.

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Impacts of Alternative D

The No Action Alternative would not have an impact on transportation infrastructure. Roadway improvement projects and development of a West Virginia Regional Airport would occur as planned or as necessary.

4.7 IMPACTS ON VISUAL RESOURCES

Due to the general nature of the Plan, any discussion of the visual impacts of any of the Alternatives would be purely conjectural. Environmental analysis, assessing the effects of the site specific improvement will be completed on site-specific projects ripe for decision making.

4.8 IMPACTS ON HAZARDOUS MATERIALS

Due to the general nature of the NCHA Strategic Management Plan, no detailed Hazardous Materials study has been undertaken. Site-specific impacts that arise during implementation of the Plan would be evaluated when sufficient information becomes available to permit precise assessment.

Hazardous materials are defined as any materials that can pose a substantial or potential hazard to human health or the environment when improperly managed. They possess at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appear on special EPA lists. Potential for presence of hazardous materials, particularly those associated with the mining industry, exists within the NCHA. Renovation of older structures within the NCHA also has the potential to expose hazardous materials such lead and asbestos.

4.9 COMPLIANCE WITH FEDERAL AND STATE LAWS, EXECUTIVE ORDERS, AND REGULATIONS

Implementation of the NCHA Strategic Management Plan must conform with all applicable laws and executive orders, including those described below. This EIS is a programmatic document and presents an overview of the potential impacts of each alternative. More detailed environmental evaluations will be developed, as necessary, as site-specific projects become ripe for decision making. Permits necessary for those site-specific projects will be addressed at that time.

Authorization

The **Omnibus Public Lands and National Forests Adjustments Act of 1988** (Public Law 100-699) authorized a feasibility study of the heritage-rich eleven-county area in southern West Virginia. As a result of this legislation, the National Park Service prepared *A Coal Mining Heritage Study: Southern West Virginia*. Many other subsequent studies and plans have followed since 1988.

In 1996, the **National Coal Heritage Area Act** (Public Law 104-333) was passed by Congress. The National Coal Heritage Act officially recognized the NCHA and established its general mission as the development and implementation of “integrated cultural, historical, and land

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resource management policies and programs to retain, enhance, and interpret significant values of the lands, water, and structures of the Area.” The legislation also mandates the creation of a management plan, authorizes federal funding by the National Park Service, and stipulates federal funding match requirements.

Governing Regulations

National Environmental Policy Act of 1969 (42 USC 4321-4347 et seq.) (NEPA) requires protection of natural, cultural and social resources and the environment, and balancing protection of such resources with development of new and different uses of the land. All federal agencies are required to prepare assessments of impacts of their Proposed Actions on the environment. In addition, alternatives to major actions must be prepared and evaluated. NEPA also requires that the general public be involved in the planning and decision-making process. Council on Environmental Quality (CEQ) regulations implementing NEPA are found in 40 CFR Parts 1500-1508.

NPS Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making (2001) sets forth the policies and procedures by which the NPS carries out its responsibilities under NEPA. More specifically, the handbook emphasizes the use of interdisciplinary teams, the process of incorporating the public into NPS decision-making, and a holistic and inclusive approach to the preparation of any environmental analysis.

Section 106 of the National Historic Preservation Act of 1966 (16 USC 470f) requires federal agencies to consider the effects of their proposed actions on historic properties included in or eligible for inclusion in the National Register of Historic Places. Federal agencies are required to provide state historic preservation officers, tribal historic preservation officers, and, as necessary, the Advisory Council on Historic Preservation a reasonable opportunity to review and comment on these actions before the federal agency’s approval of such actions.

Section 404 of the Clean Water Act of 1977 and 1987 establishes a permit program administered by the U.S. Army Corps of Engineers that regulates the discharge of dredged or fill material into waters of the United States (including wetlands). Compliance with Section 404 is mandatory for all actions that have the potential for discharging dredged or fill materials into waters of the United States.

The **Endangered Species Act of 1973** requires federal agencies to ensure that their proposed actions do not jeopardize the continued existence of listed species or critical habitat.

Executive Order 12898 of February 11, 1994 requires federal agencies to identify the effects of their proposed actions on minority and low-income populations. It also requires that they avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on those populations.

Executive Order 11988 (Floodplain Management) directs federal agencies to avoid development in floodplains whenever there is a practicable alternative and to make attempts to avoid adverse impacts associated with occupying or modifying floodplains.

Executive Order 11990 (Protection of Wetlands) directs federal agencies to avoid impacts to wetlands.

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4.10 CONCLUSION

Table 4.1 provides a comparison of the potential impacts of the four alternatives. As mentioned previously, due to the programmatic nature of this EIS and the fact that the NCHA Strategic Management Plan identifies few details, effects were assessed through the identification of broad, generic impacts. Site-specific impacts will be more precisely detailed in subsequent environmental evaluations for site-specific projects.

Preferred Alternative

Alternative C is the preferred alternative because it best meets the legislative intent of the National Coal Heritage Area Act to “develop and implement integrated cultural, historical, and land resource management policies and programs to retain, enhance, and interpret significant values of the lands, water, and structures of the Area.” Alternative C would capture a broad range of visitors and encourage local capacity building simultaneously. It gives visitors several options for exploring the 11-county heritage area with a large interpretive center, several Visitor Centers and nine Destination Centers. Alternative C provides for strong central leadership that would take an active role in the development of a broad based preservation and conservation effort that is likely to result in increased investment in the NCHA and increased business and employment opportunities.

Environmentally Preferred Alternative

Based on an assessment of the environmental impacts of the four alternatives, Alternative A is the environmentally preferred alternative because it is likely to result in minimal adverse impacts to natural resources, while at the same time resulting in beneficial impacts for the preservation of cultural resources and socioeconomic development. Alternatives B and C have the greatest potential for environmental impacts due primarily to new construction. Environmental impacts of Alternative D are anticipated to be minimal due to limited construction, which is likely to occur in areas that are already disturbed. Of the four alternatives, Alternative C is likely to have the greatest beneficial influence on the preservation of cultural resources and economic development. Alternative D is likely to have the least impact on the preservation of cultural resources and economic development.

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TABLE 4.1
Comparison of Potential Impacts

IMPACT CATEGORY	ALTERNATIVE A PHASED CORRIDOR DEVELOPMENT	ALTERNATIVE B FOCAL POINT DEVELOPMENT	ALTERNATIVE C FOCAL POINT with CORRIDOR DEVELOPMENT	ALTERNATIVE D NO ACTION
Cultural Resources	<ul style="list-style-type: none"> Clearly stated goals/strategies set clear path for preservation efforts. Proposed structure, staffing, partnering, community and agency cooperation consolidate and coordinate preservation efforts. Active NCHA organization leadership role – broad based preservation effort. Linkage of cultural resources through Destination Centers/Experience Zones would result in increased effectiveness of interpretive programs, enhanced visitor understanding and experience and increased visitation. Increased visitation could result in some degradation of cultural resources due to wear and tear. 	<ul style="list-style-type: none"> Clearly stated goals/strategies set clear path for preservation efforts. Proposed structure, staffing, partnering, community and agency cooperation consolidate and coordinate preservation efforts to a limited degree. Community initiated preservation effort. Development of new visitor center/museum would enhance visitor understanding and awareness. Potential impacts of construction of visitor center/museum include disturbance of archaeological resources that might be located on the site, impairment of historic integrity of site. Increased visitation could result in some degradation of cultural resources due to wear and tear. 	<ul style="list-style-type: none"> Clearly stated goals/strategies set clear path for preservation efforts. Proposed structure, staffing, partnering, community and agency cooperation consolidate and coordinate preservation efforts. Active NCHA organization leadership role – broad based preservation effort. Linkage of cultural resources through Destination Centers/Experience Zones would result in increased effectiveness of interpretive programs, enhanced visitor understanding and experience and increased visitation. Development of new visitor center/museum would enhance visitor understanding and awareness. Potential impacts of construction of visitor center/museum include disturbance of archaeological resources that might be located on the site, impairment of historic integrity of site. Increased visitation could result in some degradation of cultural resources due to wear and tear. 	<ul style="list-style-type: none"> Lack of clearly stated goals/strategies does not set clear path for preservation efforts. With limited structure, staffing, partnering, community and agency cooperation, preservation efforts would continue to be fragmented and uncoordinated. Grassroots preservation effort. Limited distribution of interpretive information would entice fewer visitors to the NCHA. Potential loss of cultural resources due to continued neglect, deterioration and/or abandonment.
Open Space & Recreational Resources	<ul style="list-style-type: none"> No adverse impacts anticipated. Potential for increase in visitation to open space and recreational resources due to overall increased visitation to the area. 	<ul style="list-style-type: none"> No adverse impacts anticipated. Potential for increase in visitation to open space and recreational resources due to overall increased visitation to the area. 	<ul style="list-style-type: none"> No adverse impacts anticipated. Potential for increase in visitation to open space and recreational resources due to overall increased visitation to the area. 	<ul style="list-style-type: none"> No adverse impacts anticipated.

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Socioeconomic Environment	<ul style="list-style-type: none"> Creation of demand for new jobs within the NCHA due to preservation efforts, marketing and creation of Visitor and Destination Centers. 	<ul style="list-style-type: none"> Creation of demand for new jobs in Beckley due to development of visitor center/museum. 	<ul style="list-style-type: none"> Creation of Demand for new jobs within the NCHA due to preservation efforts, marketing and creation of Visitor and Destination Centers. 	<ul style="list-style-type: none"> Minimal to no impact.
Natural Resources	<ul style="list-style-type: none"> Any adverse impacts on natural resources at Destination Centers are anticipated to be minimal. Adverse impacts resulting from increased visitation are anticipated to be minimal. 	<ul style="list-style-type: none"> Potential impacts from construction of new visitor center/museum (to be quantified when project proceeds beyond the current conceptual level). Adverse impacts resulting from increased visitation are anticipated to be minimal. 	<ul style="list-style-type: none"> Any adverse impacts on natural resources at Destination Centers are anticipated to be minimal. Potential impacts from construction of new visitor center/museum (to be quantified when project proceeds beyond the current conceptual level). Adverse impacts resulting from increased visitation are anticipated to be minimal. 	<ul style="list-style-type: none"> Minimal to no impact.
Land Use & Design of the Built Environment	<ul style="list-style-type: none"> Potential impact on land use within/immediately adjacent to Destination Centers. 	<ul style="list-style-type: none"> Potential impact on land use in the vicinity of the proposed visitor center/museum. 	<ul style="list-style-type: none"> Potential impact on land use within/immediately adjacent to Destination Centers. Potential impact on land use in the vicinity of the proposed visitor center/museum. 	<ul style="list-style-type: none"> No adverse impacts anticipated.
Infrastructure	<ul style="list-style-type: none"> Potential for increased travel on existing roadways. Potential for visual impacts. No adverse impacts anticipated. 	<ul style="list-style-type: none"> Same as A. Same as A. No adverse impacts anticipated. 	<ul style="list-style-type: none"> Same as A. Same as A. No adverse impacts anticipated. 	<ul style="list-style-type: none"> No adverse impacts anticipated. Same as A. No adverse impacts anticipated.
Visual Resources				
Hazardous Materials				