

3.0 AFFECTED ENVIRONMENT

The proposed Nuttallburg Visitor Use Area will make available opportunities for park visitors to explore the former sites of the Nuttallburg Mining Complex and the town of Nuttallburg. The mine and town were once part of an industrial corridor with multiple coal mining and lumbering communities in the vicinity of the New River within New River Gorge. Today Nuttallburg and the other communities within the gorge are largely abandoned and their sites included within New River Gorge National River, a unit of the National Park System established by Congress in 1978. New River Gorge National River encompasses approximately 73,000 acres within a 53-mile corridor that stretches from Hinton to Hawks Nest, West Virginia. The sites of the former Nuttallburg Mining Complex and town of Nuttallburg are located in Fayette County in the northern end of the park at the end of West Virginia Route 85/2, near the settlements of Edmond and Winona.

3.1 Natural Resources

■ Soil Resources

The Nuttallburg Visitor Use Area encompasses the rugged steeply sloping terrain extending from the CSX Main Line adjacent to the New River to the rim of New River Gorge near West Virginia Route 82. The lower level mining complex and the former communities of Nuttallburg and Seldom Seen historically occupied the narrow strip of relatively flat land that parallels the railroad at the base of the gorge. Steep slopes on the gorge walls ranging from 20 to 40 percent limited the settlement areas to the lower portion of the gorge. The headhouse and mine openings were located at the base of the Nuttall Sandstone rock wall at the top of the gorge. Elevations on the site range from approximately 920' at the railroad to approximately 2,100' at base of the gorge wall.

Sandstones, siltstones, and shales of the New River Formation underlay the site. Mining operations in the area extracted coal from the Fire Creek, Beckley, and Sewell coal seams contained in the New River Formation. Soils on the site are primarily derived from the underlying sandstones, siltstones, and shales (see Table 3.1). They are relatively shallow, and well drained, with moderately high runoff potential. Soil erodibility is generally low. In depressions and along streams the soils are derived from colluvium and are shallow and well drained. They have moderately low to moderately high runoff potential and moderate to high erodibility. Soils are generally severely constrained for developed uses due to steep slopes and shallow depth to bedrock. None of the soils are prime farmland soils, although the Dekalb fine sandy loam – which underlies the town of Nuttallburg site – is designated a statewide important farmland soil by the Natural Resources Conservation Service (NRCS).

■ Vegetation

Native and non-native species have revegetated much of the Nuttallburg Visitor Use Area site. Forest communities of the site today include the three major terrestrial plant communities typical at New River Gorge National River:

- riparian plant communities maintained by flooding and the moist microclimate found along waterways
- plant communities of the steep gorge slopes
- cliff faces, and plant communities of the plateaus, rims, and shoulders (Vanderhoorst 2001)

Floodplain forest dominated by plane tree, ash, ironwood, muscledwood, and American hornbeam characterizes the riparian community between the New River and the CSX railroad. Two forest types occur on the gorge slopes. Red maple, tulip poplar, sweet gum, paulonia, red buckeye, scarlet buckeye, and wood nettle are typical of the moderately sloping lower gorge slopes. The upper more steeply sloping gorge slopes are generally characterized by ash, tulip poplar, black gum, black tupelo,

TABLE 3.1. Soil Characteristics Summary – Nuttallburg Visitor Use Area

Soil Type	Depth to Bedrock	Depth to Seasonal High Water	NRCS Farmland Class ¹	Erodibility (1 st horizon K Factor)	Runoff Potential (hydrologic soil group)	Parent Material
Dekalb fine sandy loam (DbC)	shallow (1½ to 3½')	>4'	statewide important farmland	low (0.24)	C	sandstone
Dekalb channery loam (DcE)	shallow (1½ to 3½')	>4'	--	low (0.24)	C	sandstone
Dekalb and Gilpin very stony soils (DsF)	shallow (1½ to 3½')	>4'	--	low to moderate (0.24 to 0.32)	C	sandstone and shale
Ernest and Shelocta very stony silt loam, 5 to 20% (EsC)	shallow (1½ to 2')	>4'	--	moderate to high (0.28 to 0.43)	B/C	colluvium
Ernest and Shelocta very stony silt loam, 20 to 40% (EsE)	shallow (1½ to 2')	>4'	--	moderate to high (0.28 to 0.43)	B/C	colluvium
Steep Rock Land (Sr)	variable	variable	--	low	--	sandstone
Mine Dump (Me)	variable	variable	--	--	--	coal, sandstone

1. Soils designated by NRCS as "farmland of statewide importance"

Source: USDA 1975

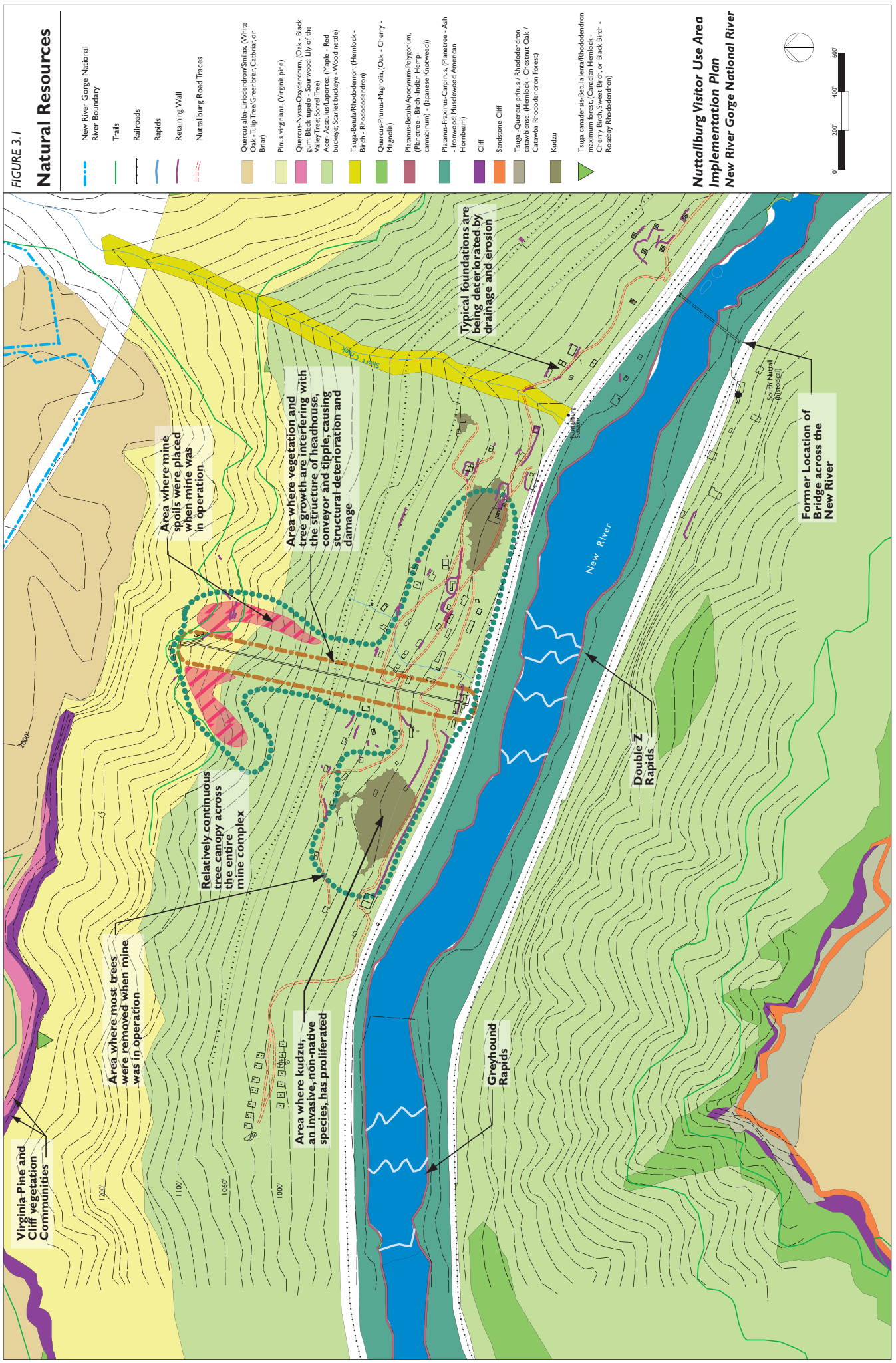
sourwood, lily of the valley tree, and sorrel tree. At the top of the gorge, above the headhouse and mine openings, rare cliff and Virginia pine communities occur on and above the headwall. White oak, tulip poplar, and greenbrier dominate the plateau behind the headwall. Along Short Creek the cool moist microclimate supports hemlock, birch, and rhododendron. No other rare or significant vegetation communities have been found on the site.

Areas of the site once developed for mining structures and town buildings have been invaded by non-native plants. Vines, particularly kudzu, cover many open landscape areas. Kudzu was removed from the former Nuttallburg town site during the summer of 2006. Reforestation occurring around the tipple and in the conveyor area has been acting as a barrier to kudzu invasion up the gorge slope. However, within the reforested areas invasive multiflora rose and Japanese jointgrass are prevalent.

Some indications of designed plantings remain at the site. Patches of daffodils and yucca occur near some foundations. A few apple trees and quince trees are also present in the town site.

■ Rare, Threatened, or Endangered Species and Their Habitats

The NPS has identified the potential for occurrences of rare, threatened, or endangered species in the Nuttallburg Visitor Use Area vicinity through review of existing data, coordination with the West Virginia Division of Natural Resources (WV DNR), and field surveys by NPS staff and other experts. Consultation with the WV DNR provided a list of designated species that potentially occur within the park (see Appendix A). Field study confirmed occurrences of several designated species in the area including three species of bats and the Allegheny woodrat (*Neotoma magister*).



Bats. Capture data based upon fall swarm mist net surveys (2002 and 2005) indicate that the Nuttallburg B abandoned mine portal (in the cliff wall adjacent to the Headhouse) provides habitat for the federally-designated endangered Virginia big-eared bat (*Corynorhinus townsendii virginianus*) and for the state-designated rare Small-footed myotis (*Myotis leibii*). Four other abandoned mine portals within one mile of the Headhouse are inhabited by the Virginia big-eared bat (*Corynorhinus townsendii virginianus*) and the Small-footed myotis (*Myotis leibii*). Two of these portals also provide habitat for the federally-designated endangered Indiana bat (*Myotis soladis*). A fifth abandoned mine portal within one mile has not been surveyed but is suspected to provide habitat for all three designated species of bats.

Limited data have been collected on bat foraging behavior and habitat use in the vicinity of the mine portals. The Virginia big-eared bat is an obligate cave/cliff/mine portal species. The Indiana bats likely use the mine portals within the gorge and surrounding areas as hibernacula and maternity roosts (Johnson et al 2005). In general their habitat can be divided into four categories:

- roosting habitat – live, dead, or dying trees with exfoliating bark, split tree trunks, split branches, holes, cracks, crevices, or hollow trunks or branches
- foraging habitat – within and on the edges of wooded areas (frequently associated with streams, floodplain forests, forested wetlands, and impounded water bodies)
- travel corridors – areas that link roosting and foraging habitat, including open understory forest, wooded fence-rows, and open paths through wooded areas, including streams, trails, and small roads with canopy cover
- hibernacula – caves or underground mines

Numerous characteristics of the Nuttallburg site and the surrounding area suggest that it would be favorable habitat for both Indiana bats and Virginia big-eared bats. Indiana bats exhibit a preference for primary and alternate roosts in trees with increased sun exposure typical of south to southwest facing slopes, such as those on the north and east side of New River Gorge in the Nuttallburg area. Within two miles of the Nuttallburg site approximately 66 percent of the land is within the park and is being managed by the NPS. The area is generally dominated by intact forest communities interspersed with open areas and corridors that include former town sites, active rail lines, and active utility corridors. Travel corridors in the form of historic mine and logging roads are common throughout the gorge and the Nuttallburg area. Riparian areas that provide foraging habitat are associated with steep perennial drainages, ephemeral pools located on historic bench roads, mine portal effluent, and the New River. These conditions provide a matrix of foraging habitat and travel ways that is likely used by both the Indiana bat and the Virginia big-eared bat.

Allegheny Woodrats. Trapping data indicate that the Nuttallburg B mine portal and one other mine portal within one mile of the headhouse provide habitat for the Allegheny woodrat (*Neotoma magister*), a federally-designated species of special concern. Trapping data have not confirmed the presence of woodrats in the other four mine portals within one mile of the headhouse, although the habitat conditions in the portals suggest that they are likely to be present.

TABLE 3.2. Abandoned Mine Portal Evaluation Scale for Portals within 1 mile of the Nuttallburg Headhouse

Priority	Mine Portal	Entrance Stability	Entrance Dimensions (ft)	Access Limitation	Rare Species Present	Bat Species Present	Endangered Bats Present	Rare Species
2	Nuttallburg B	good	10 x 25	gated	6	6	1	Virginia big-eared bat Small-footed bat Allegheny woodrat
1	West Nuttall 3	good	~2 x 3	gated	3	7	2	Virginia big-eared bat Indiana bat Small-footed bat
1	Nuttallburg South D	fair	1 x 2	ungated	2	5	2	Virginia big-eared bat Small-footed bat
2	Nuttallburg South B	poor	1 x 4	heavy sloughing	4	6	1	Virginia big-eared bat Indiana bat Allegheny woodrat, Eastern red bat
X	Nuttallburg South C	poor	1 x 4	heavy sloughing	?	?	?	not surveyed
2	West Nuttall 2	good	~6 X 12	gated	6	6	1	Virginia big-eared bat Small-footed bat
Federally-designated endangered – Virginia big-eared bat, Indiana bat State-designated rare species – Allegheny woodrat, Small-footed bat								

3.2 Cultural Resources

■ Nuttallburg Mining Complex and Town Historic District

The Nuttallburg Visitor Use Area encompasses the 90-acre Nuttallburg Mining Complex and Town Historic District. The Historic District encompasses approximately 90 acres and includes the following major elements:

- Nuttallburg coal mine complex colliery structures and ancillary structures
- the bank of 46 coke ovens
- the former town of Nuttallburg site and associated residential and commercial areas at the bottom of the gorge
- the former Seldom Seen settlement area site and associated residential area at the bottom of the gorge
- the piers of the former footbridge that linked Nuttallburg to South Nuttall on the west side of the river
- the sidings of the former Chesapeake and Ohio (C&O) Railroad
- an 0.85-mile section of the former Keeney Creek Branch Railroad

TABLE 3.3. Nuttallburg Coal Mining Complex and Town – Summary of Historic Significance

National Register Criterion	Area of Significance	Level of Significance
Criterion A – associated with events that have made a significant contribution to the broad patterns of our history	Business (Fordson Coal Company, vertical integration)	National
Criterion B – associated with the lives of person significant in our past	Industry (John Nuttall)	Local
Criterion C – embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction	Engineering (coal mining complex)	National
Criterion D – that have yielded, or may be likely to yield, information in prehistory or history	Archeology (town site)	Local

Source: West Virginia Division of Culture and History (see Appendix A)

The Historic District does not include the underground elements of the Nuttallburg Mine. The mines have been sealed off since 1958 and are presumed to be in a collapsed state following 85 years of extractive activities and abandonment (NPS 2007).

The Nuttallburg Mining Complex and Town Historic District represents the highest level of integrity as it retains all of the major elements associated with the historic activities conducted at the site (NPS 2007). Because all of the major components of the coal mining process remain, the site also possesses integrity as an intact mining system (NPS 2007). An overview of the site and its historical context is presented above in Section 1.4.

The entire 90-acre site and the major elements contained within it compose the Nuttallburg Coal Mining Complex and Town Historic District. The West Virginia State Historic Preservation Officer (SHPO) has determined that the historic district contains important business and engineering elements. Because the site is significant in several areas, the SHPO has further clarified the relative levels of significance for each area of significance reflected in the four National Register criteria (see Table 3.3) (see Appendix A). Based on these findings the historic district has been listed in the *National Register of Historic Places*.

■ Cultural Landscape

The Nuttallburg site retains the aspects and qualities necessary to convey its significance as a 20th century mining complex and town, despite the fact that many of the structures have deteriorated since being abandoned in the late 1950s (NPS 2006c). The town retains its integrity of location and setting. It remains in an isolated area of the New River Gorge. The site retains the same spatial organization represented during its period of significance. It is replete with stone building foundations, stone walls, concrete pillars, roadways, railroad sidings, and other architectural features that provide a clear sense of the community's historic layout (NPS 2007). The extent of the town is still evident and elements are still in place to exhibit the site's unique building style, materials, and workmanship. The CSX Main Line is located in the relatively level floodplain adjacent to the river. Former roads pass through the tipple level, branching to connect the numerous foundation ruins. The foundations of houses are located up the slope of the gorge above the floodplain.

Nuttallburg's site integrity suffers due to a lack of many of the historic structures. A few features from the period of significance remain, such as the tipple, conveyor, headhouse, and small railroad features.

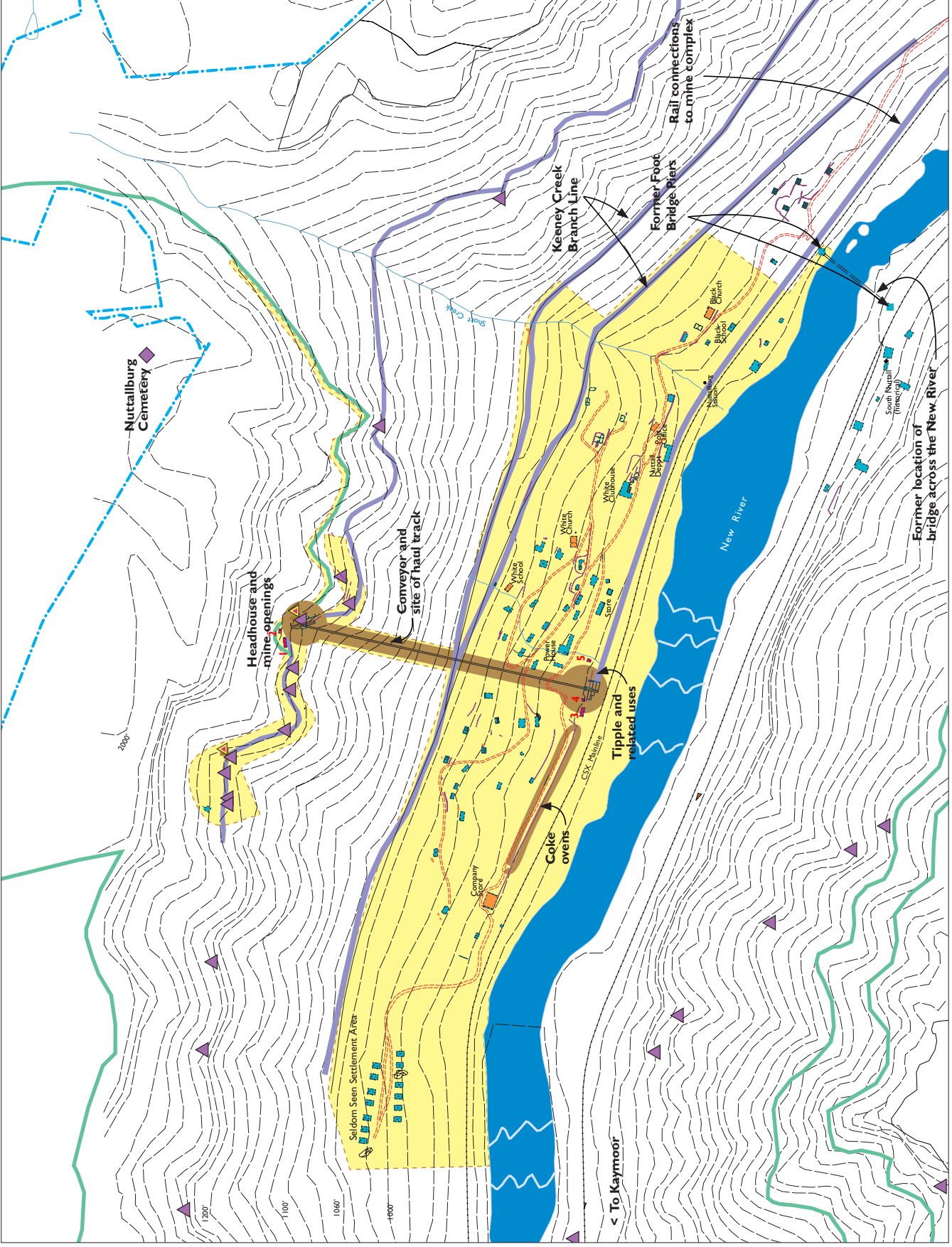
FIGURE 3.2

Historic Resources

- New River Gorge National River Boundary
- Nuttallburg Mining Complex and Town Site Historic District (Nationally Significant)
- Roads
- Trails
- Active Rail Line (CSX Main Line)
- Historic Railroad Right-of-Way
- Retaining Wall
- Nuttallburg Road Traces
- Foundation Ruins / Key Mining Structures
- 1. Substation
- 2. Hoist House
- 3. Engine House
- 4. Refuse Bin
- 5. Well House
- Community Service and Facilities
- Other Structures
- Mine Sites / Open Mines / Types
- Nuttallburg Abandoned Mine
- Cemetery
- Rapids

Note: Keeney Creek Branch Line now serves as an official trail to Nuttallburg.

Nuttallburg Visitor Use Area Implementation Plan New River Gorge National River



However, the residential dwellings indicative of the larger mining community are now represented only by cut stone foundations and retaining walls. The major mine buildings built of steel and concrete remain extant despite severe rust. A number of small landscape scale features persist including stone railroad markers, abandoned mining cars, fire hydrants, and well covers. The landscape has also been altered dramatically since the period of significance by the invasive growth of plants such as kudzu and Japanese jointgrass, although much of this was removed from the town site in the summers of 2005 and 2006.

Retaining walls are the landscape structural features most pervasive in Nuttallburg. The necessity to stabilize the steep topography of the gorge walls to support houses and roadways, while also providing level areas for gardens and yards, made the design and implementation of retaining walls critical for the success of the town design. As a result almost every building site has some type of retaining wall system. Many walls on the site remain in remarkable condition (NPS 2006c).

■ Historic Buildings and Structures

Nuttallburg Coal Mining Complex and Ancillary Structures. The most significant and intact remnants of Nuttallburg's mine operation are the steel and concrete colliery structures at the Nuttallburg Mine built by Henry Ford during the early 1920s. Buildings, structures, sites, and features associated with the Nuttallburg Mine Complex include the following (also see Figure 3.2):

- Mine Headhouse (building) – 1925-1926 (contributing)
- Nuttallburg Mine Tipple (building) 1923-1924 (contributing)
- Fan House (building) – ca 1945-1955
- Conveyor (structure) – 1925-1926
- mine opening (structure) – 1873
- Cap House (structure) – 1925-1926
- Powder House (structure) – 1925-1926
- railroad sidings (structure) – 1873
- mine and motor cars (approximately 14 structures) – circa 1925-1955
- Hoist House (site) – 1925-1926
- Substation (structure) – 1925-1926
- coke oven bank (structure) – 1873
- Mine Superintendent's Office (site) – 1920s
- Sand House (site) – 1920s
- Lower Sand House (site) – 1920s

Town of Nuttallburg (Site) – circa 1873-1958. The town of Nuttallburg was founded by John Nuttall in 1873 and was occupied until 1958. The physical evidence of the town consists of over 100 building foundations, retaining walls, property fence lines, roads, privies, primary and secondary refuse deposits, C&O property marker monuments, and the piers of the former pedestrian footbridge that crossed the New River to South Nuttall. Most of the features are located on a lowland bench and terraced hillside between the 1,000' and 1,200' elevation. State Route 85/2 was built through the town on this bench in 1892 and included a small bridge across Short Creek.

The town's building foundations are mainly located along this road and a network of inclined and switchback cinder-surfaced roads. The U.S. Geological Survey's (USGS) 1928 15-minute Fayetteville map also shows a few houses across from the Nuttallburg Tipple on the river side of the C&O tracks at the 940' elevation. The train depot for the town of Nuttallburg – Nuttall Station – was located along the east side of the C&O Railroad and just north of Short Creek. Behind the depot were the Nuttallburg Post Office and a C&O Railroad monument next to State Route 85/2.

Contributing **building and structure retaining walls and foundations** associated with the Town of Nuttallburg include the following (see Figure 3.2):

- foundations for Buildings 1 through 13 – circa 1920 – 1930
- foundations and associated retaining walls for Buildings 14 through 48, and 50 through 59 – circa 1897-1900
- Company Store – circa 1897-1900
- Building 49 – circa 1873-1900
- White Clubhouse– circa 1873-1900
- Black Church – circa 1873-1900
- White Church– circa 1873-1900
- Black School – circa 1873-1900
- White School – circa 1873-1900
- Nuttall Station – circa 1900

Contributing **objects** associated with the Town of Nuttallburg include the following (see Figure 3.2):

- cast iron water hydrants – circa 1897-1900

Contributing **circulation-related structures** associated with the Town of Nuttallburg include the following (see Figure 3.2):

- State Route 85/2 (Structure) – 1892
- Short Creek Bridge (State Route 85/2) (Structure) – 1892
- pedestrian suspension bridge towers (Site) – 1899
- Keeney Creek Branch Railroad Line (Structure) – 1892
- Trestle 1 (Short Creek – Keeney Creek Branch Railroad) (Structure) – 1892
- Trestle 2 (Short Creek – Keeney Creek Branch Railroad) (Structure) – 1892
- masonry stone retaining wall, Keeney’s Creek Branch Railroad (Associated Feature) – 1892

There are three additional (2 NPS-owned and 1 privately-owned) trestle bridges along the Keeney Creek Branch Line that have been determined eligible for the National Register but are not officially listed on it (see Figure 3.3).

■ **Archeological Resources**

The Nuttallburg Coal Mining Complex and Town Historic District is locally significant for the potential of its archeological resources to yield information on 1) the social and industrial history of a late 19th and 20th century coal mining complex in New River Gorge and in West Virginia, and 2) one of the most complete coal-related industrial sites in the United States (NPS 2007).

Shovel testing in the town of Nuttallburg at the Black Church and at a residence in Seldom Seen indicated that primary refuse deposits contain deep intact artifact-bearing soils (Fuerst 2005). Although archeological reconnaissance and testing did not analyze or curate any of the historic artifacts that were observed, their material types reflected a variety of domestic activities. The archeological reconnaissance also discovered privies in specific association with the foundations of residential housing, churches, and schools throughout the town of Nuttallburg. In addition a large secondary refuse deposit was found near the conveyor. The greatest amount of land disturbance or “made land” was found in the vicinity of the Nuttallburg tipple associated with business-related transformations of the site’s industrial landscape.

The intact primary refuse deposits provide an opportunity to examine a number of theoretical perspectives (NPS 2007), such as:

- the nature of the Nuttallburg community and its social and political landscape during the period from 1873 to 1958 when it contributed to the country's industrial development and national defense (this potential is accentuated by the provenance of the refuse deposits within deeded and functionally discrete properties and the association of properties with specific individuals and households)
- the comparative individual social histories of contemporaneous coal mining towns in the gorge, including a number of themes within Nuttallburg's community and between its community and other communities in the gorge
- community-level involvement in decisions affecting education, sanitation, water, fire fighting, and electrification
- material differences with respect to domestic household activities
- similarities and differences in economic classes in Nuttallburg and in communities within and beyond the gorge

■ Ethnographic Resources

Former residents and descendants of former residents of the town of Nuttallburg and Seldom Seen settlement have long-standing ties and strong persistent cultural associations with the Nuttallburg site. Some members of local families have substantial knowledge about the site and its resources because of their long associations with the land and have specialized knowledge about the land and the town's social and cultural history.

The landscape adjoining the Nuttallburg site – composed of the mixed mesophytic forest and associated watershed – supports the collective memory on which some local community members rely for cultural and economic survival (Hufford et al 2006). The knowledge of how to participate in this landscape is expressed through a host of practices that appear to have antecedents in distinct waves of settlement and land use including: Native American practices dating from 16th and 17th century contact between European and Native American peoples, and; Scotch-Irish, German, and African American patterns of settlement and agriculture dating from the period of frontier settlement (1700-1880), the industrial period (1880-1968), the post-industrial pre-park period (1950-1980), and the present era of NPS ownership and management (Hufford et al 2006).

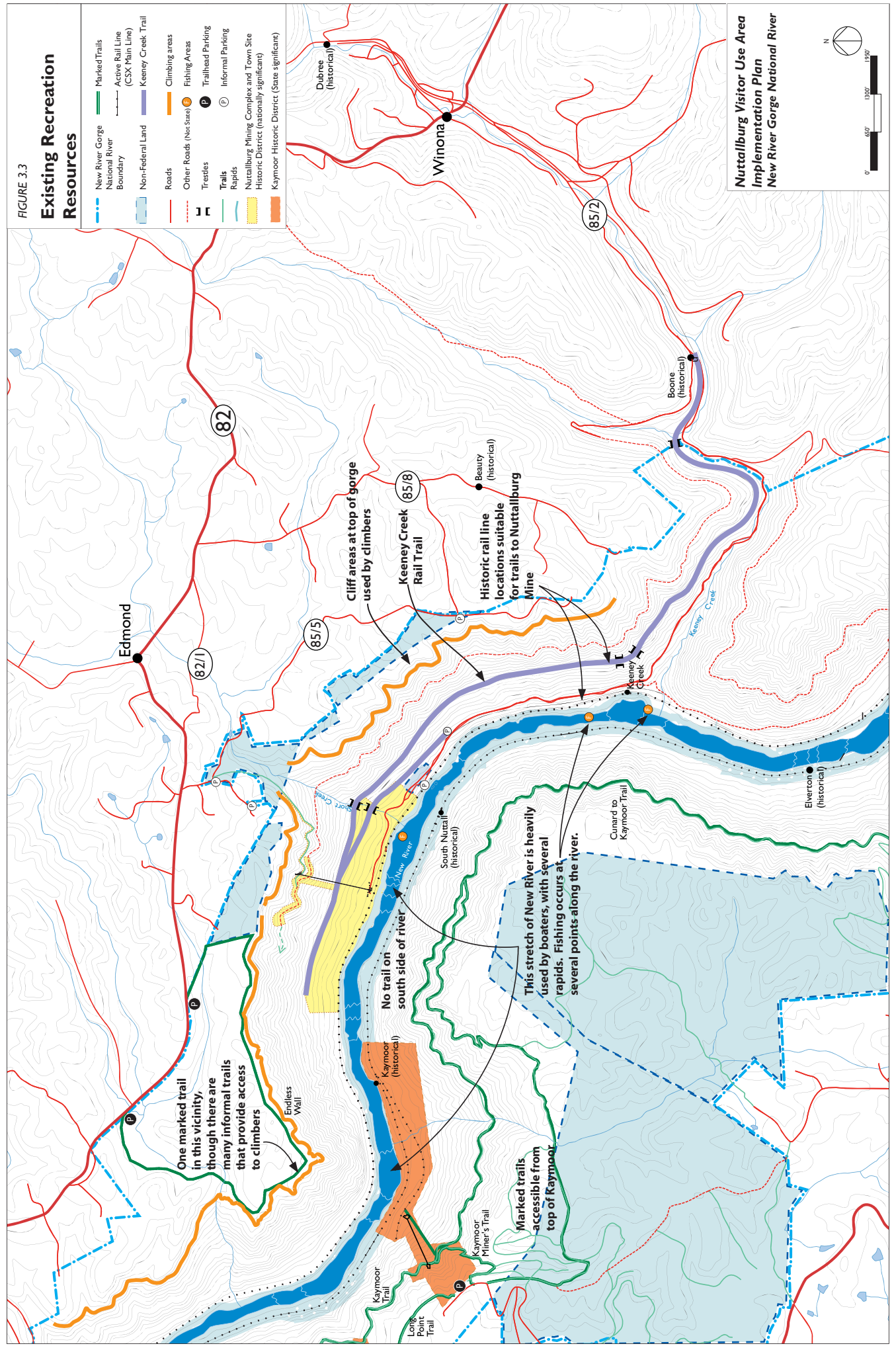
3.3 Local Roads and Park Access

Vehicular access to the Nuttallburg area is via Keeney Creek Road (WV Route 85/2) from the town of Winona. Keeney Creek Road is a narrow winding road that has been recently upgraded by the W.V. Division of Highways with asphalt paving of the steep sections, drainage improvements, and new guard rails. Slides are a recurring problem on the road requiring frequent maintenance by the state. Keeney Creek Road ends near the former town of Nuttallburg site and has been abandoned by the West Virginia Division of Highways beyond the parking area. The NPS has closed the road to public vehicular access shortly after it enters NPS property, approximately 600 feet east of Short Creek. Visitors park within the public right-of-way and continue on foot to reach the town site and the tipple area. The NPS maintains the road on its property as a graded gravel administrative road (Nuttallburg Tipple Trail/Administrative Road). The NPS recently reconstructed the bridge over Short Creek. The road provides maintenance and emergency access to the town and tipple sites and is also an official park trail.

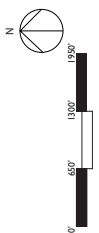
FIGURE 3.3

Existing Recreation Resources

- New River Gorge National River Boundary
- Non-Federal Land
- Roads
- Other Roads (Not State)
- Trestles
- Trails
- Rapids
- Nuttallburg Mining Complex and Town Site Historic District (nationally significant)
- Kaymoor Historic District (State significant)
- Marked Trails
- Active Rail Line (CSX Main Line)
- Keeney Creek Trail
- Climbing areas
- Fishing Areas
- Trailhead Parking
- Informal Parking



Nuttallburg Visitor Use Area
Implementation Plan
New River Gorge National River



A few visitors reach the town and mining complex site from the river. They leave their boats at the Keeney Creek Beach and hike up from the river, cross the CSX Main Line, and then follow the Keeney Creek Road.

Access to the Nuttallburg Mine and headhouse area is from the Nuttallburg Mine Trail/Administrative Road. The road begins on WV Route 85/5 and follows the old mine access road down to the headhouse area. Today the road is maintained as a graded gravel park administrative road suitable for four-wheel drive park vehicles. Public access is informally permitted by the private property owners. The development of a parking area and trailhead for public use would require acquisition of this private property.

Visitors can access the middle bench area of the Nuttallburg Visitor Use Area site – including the area beneath the conveyor – via the Keeney Creek Branch Trail/Administrative Road. The trail follows the abandoned Keeney Creek Branch Line railroad right-of-way. It is an official park trail. The NPS recently improved the four trestle bridges, including redecking and installation of handrails for visitor safety. The trail is accessed from Keeney Creek Road. Visitors using the trail park informally along the edge of the Keeney Creek Road right-of-way.

Climbers using the Nuttall Sandstone outcrop above the Headhouse park at the Nuttall Parking Facility or at an informal parking area that is privately owned located on WV 85/5. They reach the climbing area by following the Nuttallburg Mine Trail/Administrative Road which provides access to the base of the outcrop or by following the Endless Wall Trail which provides access to a network of informal trails that lead to the top of the Nuttall Sandstone outcrop.

3.4 Visitor Use and Visitor Experience

The Nuttallburg Visitor Use Area currently has no developed visitor use facilities. Visitors to the site include climbers, hikers, bikers, boaters, and those who go to the site explicitly to view its cultural resources. No interpretive media are currently available to present stories associated with the site and the NPS does not run any special interpretive programs at the site. Some directional signage is provided at trailheads for the Keeney Branch Line Trail, the Nuttallburg Mine Trail, and the Nuttallburg Tipple Trail.

Visitation to the town site and colliery structures is very low, primarily because the NPS has not encouraged visitation due to the hazards posed by the colliery structures which until recently have been in very poor condition. Visitation to the climbing area at the Nuttall Sandstone outcrop above the Headhouse is moderately high. The Nuttallburg area is also a popular hunting area for residents of nearby communities.

3.5 Park Operations and Park Facilities

In 2005 the NPS began implementing numerous emergency management actions that are providing short-term stabilization of historic buildings and structures at the Nuttallburg Mining Complex and town of Nuttallburg site (see Section 2.2 above). Several interrelated actions were completed as part of emergency stabilization to provide access to the site for equipment (see Section 3.3 above). Routine maintenance is now required at the site to maintain trails and administrative roads, as well as to maintain vegetation at the town site, along the coke oven bank, and along the conveyor length where invasive plants have been recently removed.

Other park operations in the Nuttallburg area include infrequent ranger patrols.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Assessing Environmental Consequences

Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) require the NPS to describe the probable impacts of each proposed alternative for the Nuttallburg Visitor Area on the park's cultural, natural, and physical resources; visitor use and experience; access; and park operations. The specific impact topics addressed are those retained for detailed analysis as summarized above in Section 1.6. Impact analyses and conclusions are based on the review of existing literature and park studies, information provided by park staff, professional judgments and insights of other agencies and officials, and input from interested members of the public. When assessing environmental consequences, the NPS is required to consider context, duration, and intensity of direct impacts, as well as indirect impacts, cumulative impacts, and measures to mitigate impacts. NPS policy also requires that potential "impairment" of resources be evaluated. Conclusions presented assume adoption of the mitigation measures outlined above in Section 2.5 Mitigation Measures of the Preferred Alternative.

■ Nature of Impacts

Definitions used to evaluate the nature of impacts are as follows:

- **Type.** Impact types include beneficial or adverse.
- **Beneficial.** A beneficial impact would be a positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Adverse.** An adverse impact would be a change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.
- **Context.** Context is the affected environment within which an impact would occur, such as local, park-wide, regional, global, affected interests, society as a whole, or any combination of these. Context is variable and depends on the circumstances involved with each impact topic. In this EA all impacts are local to the Nuttallburg Visitor Use Area and the WV Route 82/2 (Keeney Creek Road corridor) from the settlement of Winona to the park.
- **Duration.** Duration is the time period for which the impacts are evident. Short-term impacts are those that would be temporary, lasting a year or less, such as effects associated with construction. Long-term impacts are those that would last more than one year and could be permanent in nature.
- **Intensity.** Intensity is a measure of the severity of an impact. The intensity of an impact may be negligible, minor, moderate, or major. Impact intensity definitions are defined for each impact topic in Section 4.2 through 4.14 below.
- **Direct Impacts.** Direct impacts include impacts on the resource actually caused by the proposed action, generally at the immediate site of the action and at the time of the action. Direct impacts can extend into the future and are often permanent, but can be temporary. An example of a direct impact would be clearing second growth forest, which would immediately cause habitat loss at that location.
- **Indirect Impacts.** Indirect impacts generally occur as a result of a "side-effect" of a direct impact, but occur removed in time or space from the proposed action. An indirect impact could result from silt flowing downstream, creating turbid conditions, and adversely affecting water quality.

■ Cumulative Impacts

Assessment of cumulative impacts is required in the decision-making process for all federal projects. Cumulative impacts are defined as follows (40 CFR 1508.7):

Cumulative impacts are incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively moderate or major actions that take place over a period of time.

Cumulative impacts were considered for each alternative for all impact topics. These impacts were determined by combining the impacts of the alternatives with the impacts of other past, present, and reasonably foreseeable future actions. To do this, the NPS GMP Planning Team identified other such projects or actions at New River Gorge National River and in the surrounding Fayette, Raleigh, and Summers Counties (see Table 4.1). The geographic area of interest for the cumulative impact analysis varied, depending on the impact topic (see Table 4.2). The timeframe of the analysis was within approximately 5 to 7 years of 2008.

In defining the contribution of each alternative to cumulative impacts, the following terminology is used:

- **Imperceptible.** The incremental effect contributed by the alternative to overall cumulative impacts is such a small increment that it is impossible or extremely difficult to discern.
- **Noticeable.** The incremental effect contributed by the alternative, while evident and observable, is still relatively small in proportion to the overall cumulative impacts.
- **Appreciable.** The incremental effect contributed by the alternative constitutes a large portion of the overall cumulative impact. Because some of these actions are in the early planning stages, the evaluation of the cumulative impact is based on a general description of the project. The cumulative impact is considered for all alternatives and is presented at the end of each impact topic discussion.

TABLE 4.1 Actions Included in the Cumulative Impact Scenario

Actions	Summary Description
NPS Projects	<ul style="list-style-type: none"> ■ Sandstone Visitor Center (2003) - Visitor Center for New River Gorge National River, located near the I-64/ WV 20 interchange (Summers County) ■ Burnwood Center (future) - Multi-use facility composed of an environmental education center and a maintenance and operations facility, located on US 19 just north of the New River Bridge (Fayette County)
Development	<ul style="list-style-type: none"> ■ Hinton Technology Center (2006) - two-story 38,000 square feet technology center in downtown Hinton (Summers County) ■ Beckley Higher Education Center (2007) - 67,000 square feet of building on 33-acre campus (Fayette County) ■ Harper Road/I-77 Interchange Area (ongoing) - Lodging, restaurant, and other commercial services development in the vicinity (Raleigh County) ■ US 19 Commercial Corridor (ongoing) - various commercial developments in the US 19 between Oak Hill and Fayetteville, recently including Walmart Supercenter, Lowes, and other retailers (Fayette County) ■ Woodlands Business Park (ongoing) - 1,000-acre industrial park (Raleigh County) ■ Raleigh County Airport Industrial Park (Phase II ongoing since 2005) - two phase

TABLE 4.1 Actions Included in the Cumulative Impact Scenario

Actions	Summary Description
	<p>industrial park (Phase I – 214 acres; Phase II – 300 acres) (Raleigh County)</p> <ul style="list-style-type: none"> ■ Pinecrest Business and Technology Park (ongoing since 2004) – 1000-acre industrial park (Raleigh County) ■ Wolf Creek Park (ongoing since 2005) – mixed use development on 300 acres, including 21 manufacturing sites, 5 acres of commercial development and 100 residences, located on US 19 near Appalachian Drive (Fayette County) ■ Fayetteville Area Residential Development (ongoing) – anticipated development of recently approved residential developments, including approximately 2,830 single-family residential units at River Edge Estates, Roaring River, and Bridgeview Estates (Fayette County)
Transportation System Improvements	<ul style="list-style-type: none"> ■ US 19 Loghelly Interchange (2007) – grade-separated interchange near Appalachian Drive (Fayette County) ■ Beckley Inter-Modal Project (future) – joint transportation and economic development improvement project in downtown Beckley, including a new city hall, cultural center, and inter-modal facilities (with a 3-level underground parking) ■ East Beckley Bypass (future) – partially controlled access five-lane facility from Eisenhower Drive in Beckley to US 19 in Bradley (Raleigh County) ■ WV Turnpike (I-77) Widening (future) – addition of one lane in each direction between I-64 and US 19 (Raleigh County) ■ Shady Springs Interchange and Connector (future) – new 3-mile roadway connection from I-77 to US 19 at WV 3 (Raleigh County) ■ Bridge Replacements (future) – Lilly Bridge (WV 20) (Summers County), Big Bridge (WV 121) (Raleigh County), Mill Creek Bridge (Fayette County), Kanawha Falls Bridge (Fayette County); Thomas Burford Pugh Memorial Bridge (WV 41) (Raleigh and Fayette Counties); Thurmond Bridge (WV 25/2) (Fayette County) ■ Shawnee Parkway (future) – 18-mile reconstruction of WV 48 (Raleigh County) ■ Beckley Z-Way (future) – 10.3 mile new roadway connection from Shade Springs to Van Kirk Drive (Raleigh County) ■ New River Parkway (future) – reconstruction of River Road near Hinton as a 10-mile parkway through New River Gorge National River in the vicinity of Hinton to WV 20, including a new bridge crossing of the New River (Raleigh and Summers Counties)
Municipal Utilities and Infrastructure	<ul style="list-style-type: none"> ■ Fayette County Regional Water and Distribution System (ongoing since 1995) – regional water plant and distribution system (Fayette County)
Mined Land Reclamation	<ul style="list-style-type: none"> ■ Claremont Reclamation Project – 80-acre reclamation project within the park including destruction and burial of concrete structures, recontouring of existing gradient, reestablishing and stabilizing drainageways, revegetation, and treatment of acid mine drainage ■ Other Reclamation Projects – numerous mined land reclamation projects in Raleigh and Fayette County including a variety of activities similar to those for the Claremont Reclamation Project (see above)

■ Impairment

The *2006 NPS Management Policies* (NPS 2006) and *Director's Order 12: Conservation Planning, Environmental Impacts Analysis, and Decision-Making* (NPS 2001), require analysis of potential impacts to determine if actions would impair resources at New River Gorge National River. The fundamental purpose of the National Park System, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize to the greatest degree practicable adverse impacts on park resources and values. However, these laws give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given NPS management discretion to allow certain impacts within parks, that discretion is limited by statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. Impairment may result from NPS park management activities, as well as from visitor activities or activities undertaken by concessionaires, contractors, and others operating in the park. Whether an impact meets the definition of an impairment depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute impairment to the extent it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the New River Gorge National River, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of New River Gorge National River, or
- identified as a goal in the *General Management Plan for New River Gorge National River* (NPS 1982) and other applicable NPS planning documents

An impairment determination is provided in the conclusion section under most impact topics selected for detailed analysis in this environmental assessment. An impairment determination is not made for the local road network/park access, park operations, and park facilities topics because impairment findings relate back to park resources and values and these impact topics are not generally considered to be a park resource or value. An impairment determination is not made for the visitor use and experience topic because, according to the Organic Act, enjoyment cannot be impaired in the same way that an action can impair park resources and values.

Table 4.2

Cumulative Impact Analysis – Area of Impact

Topic	Impact Area
<ul style="list-style-type: none"> ■ physiography, geology and soils ■ floodplains ■ vegetation ■ water quality ■ aquatic wildlife ■ terrestrial wildlife ■ rare, threatened and endangered species 	watershed of the New River in Fayette, Raleigh and Summers Counties
<ul style="list-style-type: none"> ■ scenic resources 	the park viewshed in Fayette, Raleigh, and Summers Counties
<ul style="list-style-type: none"> ■ archeological resources ■ cultural landscapes ■ historic structures ■ ethnographic resources 	New River Gorge National River
<ul style="list-style-type: none"> ■ economy ■ communities 	Fayette, Raleigh, and Summers Counties
<ul style="list-style-type: none"> ■ park access 	area within three miles of the park boundary
<ul style="list-style-type: none"> ■ visitor use and visitor experience 	New River Gorge National River
<ul style="list-style-type: none"> ■ park operations 	New River Gorge National River

4.2 Soil Resources

■ Applicable Regulations and Guidelines

Regulations and guidelines related to geologic and soils include the following:

- Clean Water Act of 1977, as amended
- Farmland Protection Policy Act of 1980 and 1995
- Analysis of Impacts on Prime and Unique Agricultural Lands in Implementing NEPA
- NPS 2006 Management Policies

■ Methodology and Assumptions

Impacts to soil resources are qualitatively evaluated in terms of the nature and extent of soil disturbing activities, potential for erosion and sedimentation, restoration of areas disturbed during construction, and permanent soil development.

Definitions of Impact Intensity Levels

- Negligible:** The impact on soils would be so small that it would not be of any measurable or perceptible consequence.
- Minor:** The impact on soils would be slight and localized with few measurable consequences. There could be changes in a soil's profile in a relatively small area, but the change would not increase the potential for erosion.
- Moderate:** The impact on soils would be readily apparent and localized with measurable consequences. There could be a loss or alteration of the topsoil in a small area, or the potential for erosion to remove small quantities of additional soil could increase.
- Major:** The impact on soil resources would be readily apparent with severely adverse measurable consequences. There would be permanent loss or alteration of soils in a relatively large area, or there would be a strong likelihood for erosion to remove large quantities of additional soil.

■ Alternative 1 (Continuation of Existing Management) – Soil Resources

Analysis. In Alternative 1, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. As needed, minor actions would be taken to protect foundations and other remains and artifacts at the town site. These actions would temporarily expose small areas of surface soils in the immediate vicinity of historic buildings and structures. Areas exposed would generally be previously disturbed soils. Upon completion of stabilization actions disturbed areas would be reseeded with native grasses. Collectively these cultural resource management actions would result in a local short-term minor adverse impact on soil resources.

Natural resource management actions would include removal of invasive plants that are changing the cultural landscape – particularly kudzu, Japanese knotweed, and multiflora rose – by cutting, mowing, and selective application of Herbicides (as recommended in the park's *Integrated Pest Management* (NPS 2003)). Where Herbicides is used, areas of exposed surface soil would be immediately reseeded with native grasses. These natural resource management actions would have a local short-term moderate adverse impact on soil resources.

Existing trails and administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. Routine

maintenance of park administrative roads and trails would have a local short-term negligible impact on soil resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on soil resources are identified in Section 4.1 above. Throughout the watershed, land development and road building in mountainous terrain generally involves clearing forest followed by cutting, filling, and site grading. Large areas of exposed soils characterize many development sites. Rock excavation and blasting is commonly used to remove road at or near the surface that interferes with site leveling. In the past, few controls over these construction activities have existed, resulting in high historic rates of erosion and sedimentation. Recently, through the National Pollutant Discharge Elimination System (NPDES) program the state of West Virginia has begun regulating stormwater containing sediment flowing from construction sites into the state's waters. This has and will continue to reduce erosion and sedimentation losses from construction sites throughout the watershed. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on soil resources. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on soil resources. Alternative 1 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural resource management actions in Alternative 1 would have a local short-term minor adverse impact on soil resources. Natural resource management Actions in Alternative 1 would have a local short-term moderate adverse impact on soil resources. Routine maintenance of park administrative roads and trails would have periodic short-term negligible impacts on soil resources. Alternative 1 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on soil resources. There would be no impairment of soil resources in the park.

■ Alternative 2 (Preferred Alternative) – Impacts on Soil Resources

Analysis. As in Alternative 1, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse, as well as minor actions to protect foundations at the town site. In addition actions would be taken to rehabilitate one or two coke ovens and to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg. These actions would temporarily expose small areas of surface soils in the immediate vicinity of historic buildings and structures. Areas exposed would generally be previously disturbed soils. Upon completion of stabilization actions disturbed areas would be reseeded with native grasses. Collectively these cultural resource management actions would result in a local short-term minor adverse impact on soil resources.

As in Alternative 1, natural resource management actions would include removal of invasive plants that are changing the cultural landscape resulting in a local short-term moderate adverse impact on soil resources.

As in Alternative 1, existing trails and administrative roads would remain with no improvements other than routine maintenance. In addition 1) a trail would be added in the vicinity of the coke ovens, 2) a new trail would be added from the headhouse to the tipple (largely following existing trails but requiring limited grading to ensure slope stability), 3) the rights-of-way of historic traces of major town roads would be cleared of invasive plants, and 4) other vegetation and maintained as stabilized trails. Trails would likely have a gravel surface seeded with native grasses that would be mowed periodically. Rehabilitation of major road traces and construction of new trails could temporarily expose up to 0.48 acres of previously disturbed surface soils in the immediate vicinity of historic buildings and structures. Best management practices would be used during construction to mitigate erosion and sedimentation. Rehabilitation of major historic traces and new trail construction would result in a local short-term moderate adverse impact on soil resources. Trail maintenance actions would result in a local short-term negligible impact on soil resources.

Construction of new visitor parking facilities would involve minor grading of approximately 1.72 acres exposing surface soils to erosion until stabilized through placement of crushed stone or by revegetation with native grasses resulting in a local short-term moderate adverse impact on soil resources. Crushed stone would be placed over 1.53 acres resulting in a local long-term moderate adverse impact on soil resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on soil resources are identified in Section 4.1 above. The cumulative impacts of these actions on soil resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on soil resources. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on soil resources. Alternative 2 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural resource management actions in Alternative 2 would have a local short-term minor adverse impact on soil resources. Natural resource management Actions in Alternative 2 would have a local short-term moderate adverse impact on soil resources. Rehabilitation of major historic traces and new trail construction would result in a local short-term moderate adverse impact on soil resources. Routine maintenance of park administrative roads and trails would have periodic short-term negligible impacts on soil resources. Construction of new visitor parking facilities would result in both short-term and long-term local moderate adverse impacts on soil resources. Alternative 2 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on soil resources. There would be no impairment of soil resources in the park.

■ Alternative 3 – Impacts on Soil Resources

Analysis. As in Alternatives 1 and 2, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse, as well as minor actions to protect foundations at the town site. In addition actions would be taken as in Alternative 2 to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. In Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. These actions would temporarily expose small areas of surface soils in the immediate vicinity of historic buildings and structures. Areas exposed would generally be previously disturbed soils. Upon completion of stabilization actions disturbed areas would be reseeded with native grasses. Collectively these cultural resource management actions would result in a local short-term minor adverse impact on soil resources.

As in Alternatives 1 and 2, natural resource management actions would include removal of invasive plants that are changing the cultural landscape resulting in a local short-term moderate adverse impact on soil resources.

As in Alternatives 1 and 2, existing trails and administrative roads would remain with no improvements other than routine maintenance. As in Alternative 2 a trail would be added in the vicinity of the coke ovens. In Alternative 3 rehabilitation of historic traces would be expanded to include most town roads. These would be cleared, stabilized, and maintained as trails, affecting approximately 1.65 acres of previously disturbed soils within these rights-of-way. In addition a new trail connection would be established from the headhouse to the tipple requiring clearing, stabilization, and long-term maintenance. Trail construction could temporarily expose up to 0.76 acre of previously disturbed soils. Best management practices would be used during construction to mitigate erosion and sedimentation. Upon completion of stabilization actions disturbed areas would be reseeded with native grasses. Rehabilitation of most historic road traces and construction of new trails would result in a local short-term minor adverse impact on soil resources. Trail maintenance actions would result in a local short-term negligible impact on soil resources.

Construction of new visitor parking facilities would involve minor grading of approximately 1.82 acres exposing surface soils to erosion until stabilized through placement of crushed stone or by revegetation with native grasses resulting in a local short-term moderate adverse impact on soil resources. Crushed stone would be placed over 1.62 acres resulting in a local long-term moderate adverse impact on soil resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on soil resources are identified in Section 4.1 above. The cumulative impacts of these actions on soil resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on soil resources. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on soil resources. Alternative 3 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural resource management actions in Alternative 3 would have a local short-term minor adverse impact on soil resources. Natural resource management Actions in Alternative 3 would have a local short-term moderate adverse impact on soil resources. Rehabilitation of most historic road traces and construction of new trails would result in a local short-term moderate adverse impact on soil resources. Construction of new visitor parking facilities would result in both short-term and long-term local moderate adverse impacts on soil resources. Routine maintenance of park administrative roads and trails would have periodic short-term negligible impacts on soil resources. Alternative 3 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on soil resources. There would be no impairment of soil resources in the park.

■ Alternative 4 – Impacts on Soil Resources

Analysis. As in Alternatives 1, 2, and 3, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse, as well as minor actions to protect foundations at the town site. In addition actions would be taken as in Alternative 2 to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. As in Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. These actions would temporarily expose small areas of surface soils in the immediate vicinity of historic buildings and structures. Areas exposed would generally be previously disturbed soils. Upon completion of stabilization actions disturbed areas would be reseeded with native grasses. Collectively these cultural resource management actions would result in a local short-term minor adverse impact on soil resources.

As in Alternatives 1, 2, and 3 natural resource management actions would include removal of invasive plants that are changing the cultural landscape resulting in a local short-term moderate adverse impact on soil resources.

As in Alternatives 1, 2, and 3, existing trails and administrative roads would remain with no improvements other than routine maintenance. As in Alternative 2 a trail would be added in the vicinity of the coke ovens. As in Alternative 3 Rehabilitation of historic traces would be expanded to include most town roads. These would be cleared, stabilized, and maintained as trails, affecting approximately 1.65 acres of previously disturbed soils within these rights-of-way. As in Alternative 3, a new trail connection would be established from the headhouse to the tipple affecting up to 0.76 acre of previously disturbed soils. In addition the trail connection between the Nuttallburg town site and the Kaymoor town site would be reestablished along its historic trace (including a footbridge across the New River) affecting approximately 2.22 acres. These actions would temporarily expose surface soils most of which have been previously disturbed soils. Best management practices would be used during construction to mitigate erosion and sedimentation. Upon completion of stabilization actions

disturbed areas would be reseeded with native grasses. Rehabilitation of most historic road traces and construction of new trails would result in a local short-term moderate adverse impact on soil resources. Trail maintenance actions would result in a local short-term negligible impact on soil resources.

Construction of new visitor parking facilities would involve minor grading of approximately 1.86 acres exposing surface soils to erosion until stabilized through placement of crushed stone or by revegetation with native grasses resulting in a local short-term moderate adverse impact on soil resources. Crushed stone would be placed over 1.65 acres resulting in a local long-term moderate adverse impact on soil resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on soil resources are identified in Section 4.1 above. The cumulative impacts of these actions on soil resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on soil resources. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on soil resources. Alternative 4 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural resource management actions in Alternative 4 would have a local short-term minor adverse impact on soil resources. Natural resource management actions in Alternative 4 would have a local short-term moderate adverse impact on soil resources. Rehabilitation of most historic road traces and construction of new trails would result in a local short-term moderate adverse impact on soil resources. Construction of new visitor parking facilities would result in both short-term and long-term local moderate adverse impacts on soil resources. Routine maintenance of park administrative roads and trails would have periodic short-term negligible impacts on soil resources. Alternative 4 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on soil resources. There would be no impairment of soil resources in the park.

■ **Comparison of Impacts of the Alternatives – Soil Resources**

Cultural resource management actions in all four alternatives would have a local short-term minor adverse impact on soil resources. Natural resource management in all four alternatives would have a local short-term moderate adverse impact on soil resources. In Alternative 2 rehabilitation of major historic road traces and construction of new trails would result in a local short-term moderate adverse impact on soil resources. In Alternatives 3 and 4 rehabilitation of most historic road traces and construction of new trails would result in a local short-term moderate adverse impact on soil resources. In Alternative 2 no new trails would be constructed resulting in no impacts to soil resources. In Alternative 3 new trail construction would result in a local short-term minor adverse impact on soil resources, while new trail construction in Alternative 4 would result in a local short-term moderate adverse impact on soil resources. In Alternatives 2, 3, and 4 construction of new visitor parking facilities would result in both short-term and long-term local moderate adverse impacts on soil resources. Routine maintenance of park administrative roads and trails in all four alternatives would have periodic short-term negligible impacts on soil resources.

Each alternative would contribute an imperceptible adverse increment to the total cumulative moderate adverse impact on soil resources. None of the alternatives would result in an impairment of park resources or values related to soil resources.

4.3 Vegetation

■ Applicable Regulations and Guidelines

Regulations and guidelines related to vegetation include the following:

- Executive Order 13112 – Invasive Plants
- Endangered Species Act of 1973, as amended
- NPS 2006 Management Policies

■ Methodology and Assumptions

Impacts to vegetation are evaluated in terms of the vegetation to be disturbed during construction and long-term site maintenance and the extent and likely success of measures to mitigate adverse impacts.

Definitions of Impact Intensity Levels

Negligible: The impact on vegetation would not be of any measurable or perceptible consequence; impacts would be small scale and little (if any) mitigation would be needed.

Minor: The impact on vegetation would be slight and localized with few measurable consequences. This could include changes in the abundance, distribution, or composition of individual species in a local area, but not changes that would affect the viability of vegetation communities. Changes to local ecological processes would be minimal. If mitigation is needed to offset adverse impacts it would be relatively simple to implement and would likely be successful.

Moderate: The impact on vegetation would be readily apparent with measurable consequences. This could include changes in the abundance, distribution, or composition of local vegetation communities, but not changes that would affect the viability of regional plant populations. Changes to local ecological processes would be of limited extent. Mitigation would be needed to offset adverse impacts, could be extensive, and would likely be successful.

Major: The impact on vegetation would be readily apparent with severely adverse consequence. This could include changes in the abundance, distribution, or composition of a local vegetation community or regional plant population to the extent that the population would not be likely to recover. Significant ecological processes would be altered, and landscape level (regional) changes could be expected. Extensive mitigation would be needed to offset adverse impacts and success of the mitigation measures would not be guaranteed.

■ Alternative 1 (Continuation of Existing Management) – Impacts on Vegetation

Analysis. In Alternative 1, cultural and natural resource management actions would include ongoing maintenance to control invasive plants and growth of new trees and understory plants in the recently rehabilitated coke oven area and in the rail bed parallel to the coke oven bank on its downhill side. Similar management actions would be taken to control invasive vegetation at the town site where it has recently been removed. Maintenance would include periodic mowing, removal of invasive species (by cutting and some use of herbicide), and removal of young native trees and shrubs where their continued growth would pose threats to cultural resources. These actions would generally help to control the spread of invasive plants in the area. Collectively these cultural and natural resource management actions would result in a local long-term minor beneficial impact on vegetation resources.

Existing trails and administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. Maintenance would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation resources are identified in Section 4.1 above. These generally include development on private property, public development projects, and transportation system improvements that have resulted in or could result in loss of vegetation or general degradation of vegetation communities. Loss of vegetation has occurred through clearing and grading and subsequent conversion of natural lands to developed uses. Fragmentation, non-native species introduction, drainage alterations, erosion and sedimentation, introduction of contaminants from urban runoff, and loss due to herbicide drift, have adversely impacted remaining areas of natural vegetation adjoining developed lands. Historically high impacts on vegetation have occurred because in the past there were few controls over land development intended to protect vegetation. Reasonably foreseeable actions that would have impacts on vegetation would be subject to recently adopted local community and state regulations requiring stormwater management, erosion and sedimentation control, and replanting with native species. Compliance with these regulations would reduce the extent of impacts of foreseeable actions on vegetation, although impacts would continue to occur at a reduced level. Collectively these other actions have contributed or will contribute a long-term moderate adverse impact on vegetation resources. The impacts of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on vegetation resources. Alternative 1 would contribute an imperceptible beneficial increment to the total cumulative impact.

Conclusion. Cultural and natural resource management actions in Alternative 1 would result in a local long-term minor beneficial impact on vegetation resources. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources. Alternative 1 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on vegetation resources. There would be no impairment of vegetation resources in the park.

■ **Alternative 2 (Preferred Alternative) – Impacts on Vegetation**

Analysis. As in Alternative 1, cultural and natural resource management actions would include ongoing maintenance to control invasive plants and growth of new trees and understory plants in the recently rehabilitated coke oven area and in the rail bed parallel to the coke oven bank on its downhill side. Similar management actions would be taken to control invasive vegetation at the town site where it has recently been removed. Maintenance would include periodic mowing, removal of invasive species (by cutting and some use of herbicide), and removal of young native trees and shrubs where their continued growth would pose threats to cultural resources. These actions would generally help to control the spread of invasive plants in the area. Collectively these cultural and natural resource management actions would result in a local long-term minor beneficial impact on vegetation resources.

As in Alternative 1, existing trails and administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. In addition a trail would be added in the vicinity of the coke ovens and the rights-of-way historic traces of major town roads would be cleared of invasive plants and other vegetation and maintained as stabilized trails with a gravel surface reseeded with native grasses. These actions would affect approximately 0.48 acres within these rights-of-way resulting in a local long-term minor adverse impact on vegetation. Maintenance of trails and road traces would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. Removal of vegetation from major historic road traces would have a local long-term

minor adverse impact on vegetation resources. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources.

Construction of four new visitor parking facilities would involve clearing and grading of approximately 1.72 acres. Young secondary forest that characterizes the sites would be removed. Following construction approximately 1.53 acres would be committed to gravel-surface parking and approximately 0.19 acre in perimeter areas would be seeded with native grasses. Clearing for parking facilities would result in a local long-term minor adverse impact on vegetation resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation resources are identified in Section 4.1 above. The cumulative impacts of these actions on vegetation resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute a long-term moderate adverse impact on vegetation resources. The impacts of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on vegetation resources. Alternative 2 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural and natural resource management actions in Alternative 2 would result in a local long-term minor beneficial impact on vegetation resources. Removal of vegetation from major historic road traces and new trail construction in Alternative 2 would have a local long-term minor adverse impact on vegetation resources. Clearing for construction of new trails and parking facilities in Alternative 2 would result in a local long-term minor adverse impact on vegetation resources. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources. Alternative 2 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on vegetation resources. There would be no impairment of vegetation resources in the park.

■ Alternative 3 – Impacts on Vegetation

Analysis. As in Alternatives 1 and 2, cultural and natural resource management actions would include ongoing maintenance to control invasive plants and growth of new trees and understory plants in the recently rehabilitated coke oven area and in the rail bed parallel to the coke oven bank on its downhill side. Similar management actions would be taken to control invasive vegetation at the town site where it has recently been removed. Maintenance would include periodic mowing, removal of invasive species (by cutting and some use of herbicide), and removal of young native trees and shrubs where their continued growth would pose threats to cultural resources. Collectively these cultural and natural resource management actions would result in a local long-term minor beneficial impact on vegetation resources.

As in Alternatives 1 and 2, existing trails and administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. As in Alternative 2, a trail would be added in the vicinity of the coke ovens. In Alternative 3 rehabilitation of historic traces would be expanded to include most town roads. These would be cleared of invasive plants and maintained as stabilized trails with a gravel surface reseeded with native grasses. These actions would affect approximately 1.72 acres within these rights-of-way. In Alternative 3 trees would also be thinned in the Nuttallburg town site, the Seldom Seen site, the headhouse area, and along the conveyor length to enhance interior views and top to bottom views. In addition in Alternative 3 new trail connection would be established from the headhouse to the tipple requiring clearing 0.69 acre of young trees, understory plants, and invasive plants within the trail right-of-way. Maintenance of trails and road traces would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. Removal of vegetation from historic traces would have a local long-term minor adverse impact on vegetation resources. Clearing for new trail construction would result in a

local long-term minor adverse impact on vegetation resources. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources.

In Alternative 3 construction of four new visitor parking facilities would involve clearing and grading of approximately 1.82 acres. Young secondary forest that characterizes the sites would be removed. Following construction approximately 1.62 acres would be committed to gravel-surface parking and approximately 0.20 acre in perimeter areas would be seeded with native grasses. Clearing for parking facilities would result in a local long-term minor adverse impact on vegetation resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation resources are identified in Section 4.1 above. The cumulative impacts of these actions on vegetation resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute a long-term moderate adverse impact on vegetation resources. The impacts of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on vegetation resources. Alternative 3 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural and natural resource management actions in Alternative 3 would result in a local long-term minor beneficial impact on vegetation resources. Removal of vegetation from most historic road traces in Alternative 3 would result in a local long-term minor adverse impact on vegetation resources. Tree thinning would have a local long-term minor adverse impact on vegetation resources. Clearing for construction of new trails and parking facilities in Alternative 3 would result in a local long-term minor adverse impact on vegetation resources. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources. Alternative 3 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on vegetation resources. There would be no impairment of vegetation resources in the park.

■ **Alternative 4 – Impacts on Vegetation**

Analysis. As in Alternatives 1, 2, and 3, cultural and natural resource management actions would include ongoing maintenance to control invasive plants and growth of new trees and understory plants in the recently rehabilitated coke oven area and in the rail bed parallel to the coke oven bank on its downhill side. Similar management actions would be taken to control invasive vegetation at the town site where it has recently been removed. Maintenance would include periodic mowing, removal of invasive species (by cutting and some use of herbicide), and removal of young native trees and shrubs where their continued growth would pose threats to cultural resources. Collectively these cultural and natural resource management actions would result in a local long-term minor beneficial impact on vegetation resources.

As in Alternatives 1, 2, and 3, existing trails and administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. As in Alternative 2, a trail would be added in the vicinity of the coke ovens. As in Alternative 3 rehabilitation of historic traces would be expanded to include most town roads. These would be cleared of invasive plants and maintained as stabilized trails with a gravel surface reseeded with native grasses. These actions would affect approximately 1.72 acres within these rights-of-way. As in Alternative 3, trees would also be thinned in the Nuttallburg town site, the Seldom Seen site, the headhouse area, and along the conveyor length to enhance interior views and top to bottom views. As in Alternative 3, a new trail connection would be established from the headhouse to the tipple requiring clearing 0.69 acre of young trees, understory plants, and invasive plants within the trail right-of-way. In addition, in Alternative 4 the trail connection between the Nuttallburg town site and the Kaymoor town site would be reestablished along its historic trace with new trail right-of-way connecting to a new footbridge across the New River. This would require clearing an additional 2.22 acres of invasive plants and other vegetation within the trail right-of-way.

Maintenance of road traces and trails would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. Removal of vegetation from historic traces would have a local long-term minor adverse impact on vegetation resources. Clearing for new trail construction would result in a local long-term minor adverse impact on vegetation resources. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources.

In Alternative 4 construction of four new visitor parking facilities would involve clearing and grading of approximately 1.86 acres. Young secondary forest that characterizes the sites would be removed. Following construction approximately 1.65 acres would be committed to gravel-surface parking and approximately 0.21 acre in perimeter areas would be seeded with native grasses. Clearing for parking facilities would result in a local long-term minor adverse impact on vegetation resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on vegetation resources are identified in Section 4.1 above. The cumulative impacts of these actions on vegetation resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute a long-term moderate adverse impact on vegetation resources. The impacts of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on vegetation resources. Alternative 4 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural and natural resource management actions in Alternative 4 would result in a local long-term minor beneficial impact on vegetation resources. Removal of vegetation from historic road traces in Alternative 4 would have a local long-term minor adverse impact on vegetation resources. Tree thinning along historic road traces and the conveyor would have a local long-term minor adverse impact on vegetation resources. Clearing for construction of new trails and parking facilities in Alternative 4 would result in a local long-term minor adverse impact on vegetation resources. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on vegetation resources. Alternative 4 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on vegetation resources. There would be no impairment of vegetation resources in the park.

■ **Comparison of Impacts of the Alternatives – Vegetation**

Cultural and natural resource management actions in all four alternatives would have a local short-term minor adverse impact on vegetation resources. Removal of vegetation from historic road traces in Alternatives 2, 3 and 4 would have a local long-term minor adverse impact on vegetation resources. Tree thinning in Alternatives 3 and 4 would have a local long-term minor adverse impact on vegetation resources. Clearing for construction of new trails and parking facilities in Alternatives 2, 3, and 4 would result in local long-term minor adverse impacts on vegetation resources. Routine maintenance of park administrative roads and trails in all four alternatives would have periodic long-term negligible impacts on soil resources.

Alternative 1 would contribute an imperceptible beneficial increment to the total cumulative moderate adverse impact on vegetation resources. Alternatives 2, 3, and 4 would contribute an imperceptible adverse increment to the total cumulative moderate adverse impact on vegetation resources. None of the alternatives would result in an impairment of park resources or values related to vegetation resources.

4.4 Rare, Threatened, or Endangered Species and Their Habitats

■ Applicable Regulations and Guidelines

Regulations and guidelines related to rare, threatened, or endangered species and their habitats include the following:

- Endangered Species Act of 1973, as amended
- Bald and Golden Eagle Protection Act
- NPS 2006 Management Policies

■ Methodology and Assumptions

Potential impacts to designated species are identified in terms of proposed visitor activity areas and site management actions that would affect critical habitat of designated species known to occur at or near the site of the proposed action. Findings are based on best available data regarding the occurrence and location of rare, threatened, or endangered species assembled from NPS staff field observations and studies. Mitigation measures to be taken to protect federally designated species are identified.

Definitions of Impact Intensity Levels

Negligible: There would be no effects on a listed or protected species or designated critical habitat.

Minor: The effects on special status species are expected to be discountable and insignificant.

Moderate: The effects on special status species may pose an impact on listed species or designated critical habitat that could be meaningfully measured, detected, or evaluated.

Major: The effects would include any adverse effect to the species that may occur as a direct or indirect result of the alternative and the effect is not discountable or insignificant.

■ Alternative 1 (Continuation of Existing Management) – Impacts on Rare, Threatened, or Endangered Species and Their Habitats

Analysis. In Alternative 1, cultural resource management actions in the vicinity of the habitat of designated species would include long-term stabilization of the tipple, headhouse, and conveyor. These actions would generally include structural repairs, rust removal, and painting. Construction would occur during daytime hours. Staging areas and road access would be limited to areas previously cleared for short-term emergency stabilization actions that are already underway or completed. There would be no removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively the cultural resource management actions would result in local short-term and local long-term negligible impacts on designated species and their habitat.

Natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. New tree growth would be cleared or pruned along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. These actions would affect young trees that have grown up subsequent to clearing that has recently occurred as part of the short-term emergency stabilization of these structures. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively natural resource management actions would result in local short-term and long-term negligible impacts on designated species and their habitat.

Existing trails/administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. Maintenance would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. These actions would affect young trees that have grown up subsequent to clearing that has recently occurred as part of the emergency stabilization project. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Routine maintenance of park administrative roads and trails would have a local long-term negligible impact on designated species and their habitat.

Visitation is projected to be approximately 150 visitors on an average summer day. Most visitors would visit the lower portion of the site during daytime hours. Visitation to the area in the vicinity of the headhouse and abandoned mine openings would be limited to day use only. All abandoned mine portals within one mile of the headhouse would be gated and fenced to prevent visitor access and disturbance. Overall, visitor use would have a local long-term negligible impact on designated species and their habitat.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on designated species and their habitat are identified in Section 4.1 above. These other actions have contributed or will contribute long-term moderate adverse impacts on designated species and their habitat. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on designated species and their habitat. Alternative 1 would contribute an imperceptible increment to the total cumulative impact.

Conclusion. Cultural resource and natural resource management actions in Alternative 1 would result in local short-term and long-term negligible impacts on designated species and their habitat. Routine maintenance of park administrative roads and trails would result in a local long-term negligible impact on designated species and their habitat. Projected visitor use associated with Alternative 1 would result in a local long-term negligible impact on designated species and their habitat. The collective management actions in Alternative 1 would contribute an imperceptible increment to the overall cumulative long-term moderate adverse impact on designated species and their habitat. There would be no impairment of designated species and their habitat.

■ **Alternative 2 (Preferred Alternative) – Impacts on Rare, Threatened, or Endangered Species and Their Habitats**

Analysis. As in Alternative 1, cultural resource management actions in the vicinity of the habitat of designated species would include long-term stabilization of the tipple, headhouse, and conveyor. These actions would generally include structural repairs, rust removal, and painting. Construction would occur during daytime hours. Staging areas and road access would be limited to areas previously cleared for short-term emergency stabilization actions that are already underway or completed. There would be no removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively the cultural resource management actions would result in local short-term and local long-term negligible impacts on designated species and their habitat.

As in Alternative 1, natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. New tree growth would be cleared or pruned along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. These actions would affect young trees that have grown up subsequent to the clearing and pruning that has already been completed as part of the short-term emergency stabilization of these structures. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively natural resource management actions would result in local short-term and long-term negligible impacts on designated species and their habitat.

In Alternative 2, development and maintenance of visitor use facilities that could potentially affect designated species and their habitat include the following:

- As in Alternative 1, existing trails/administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. Maintenance would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. These actions would affect young trees that have grown up subsequent to the clearing that has already been completed as part of the emergency stabilization project. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area.

Routine maintenance of trails and administrative roads would result in a local long-term negligible impact on designated species and their habitat.

- Historic traces of major town roads would be cleared of invasive plants and maintained as stabilized trails with a gravel surface reseeded with native grasses. These actions would affect approximately 0.41 acres within these rights-of-way. Maintenance of the road traces would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into the rights-of-way. Tree removal would have the potential to displace Indiana bats during tree felling operations, but this potential would be low based on the low number of trees likely to exhibit roosting characteristics. To reduce the potential impact all trees within the rights-of-way would be inspected and those found to have cavities with evidence of bat roosting (e.g. guano deposits, etc.) would not be removed or they would be removed during the hibernation period from November 15th through March 31st. Mitigation for tree removal would include installation of bat condos in the vicinity of the conveyor that would provide additional summer roosting habitat. Road trace rehabilitation could also affect bat travel corridors by removing some overstory vegetation and completely removing understory vegetation on the trail bed. To reduce the potential for this to impact bat travel corridors trail beds would be reseeded with native grasses.

Rehabilitation of major town historic road traces would have a short-term minor adverse impact on designated species and their habitat. Routine maintenance of rehabilitated road traces would have a local long-term negligible impact on designated species and their habitat.

- In Alternative 2, construction of four new visitor parking facilities would involve clearing and grading of approximately 1.72 acres. Young secondary forest that characterizes the sites would be removed. Following construction approximately 1.53 acres would be committed to gravel-surface parking and approximately 0.19 acre in perimeter areas would be seeded with native grasses. None of the parking facilities would be located within 2000 feet of the six abandoned mine portals in the site vicinity.

Clearing for parking facilities would result in a local long-term negligible impact on designated species and their habitat.

Visitation is projected to be approximately 460 visitors on an average summer day. Most visitors would visit the lower portion of the site during daytime hours. Visitation to the area in the vicinity of the headhouse and abandoned mine openings would be limited to day use only. All abandoned mine portals within one mile of the headhouse would be gated and fenced to prevent visitor access and disturbance. Overall, visitor use would have a local long-term negligible impact on designated species and their habitat.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on designated species and their habitat are identified in Section 4.1 above. The cumulative impacts of these actions on designated species and their habitat are described above for

Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on designated species and their habitat. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on designated species and their habitat. Alternative 2 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural resource and natural resource management actions in Alternative 2 would result in local short-term and long-term negligible impacts on designated species and their habitat. Rehabilitation of major town historic road traces would result in a short-term minor adverse impact on designated species and their habitat. Routine maintenance of trails, administrative roads, and rehabilitated historic road traces would result in a local long-term negligible impact on designated species and their habitat. Clearing for parking facilities would result in a local long-term negligible impact on designated species and their habitat. Projected visitor use associated with Alternative 2 would result in a local long-term negligible impact on designated species and their habitat. The collective management actions in Alternative 2 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on designated species and their habitat. There would be no impairment of designated species and their habitat.

■ **Alternative 3 – Impacts on Rare, Threatened, or Endangered Species and Their Habitats**

Analysis. As in Alternatives 1 and 2, cultural resource management actions in the vicinity of the habitat of designated species would include long-term stabilization of the tipple, headhouse, and conveyor. These actions would generally include structural repairs, rust removal, and painting. Construction would occur during daytime hours. Staging areas and road access would be limited to areas previously cleared for short-term emergency stabilization actions that are already underway or completed. There would be no removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively the cultural resource management actions would result in local short-term and local long-term negligible impacts on designated species and their habitat.

As in Alternatives 1 and 2, natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. New tree growth would be cleared or pruned along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. These actions would affect young trees that have grown up subsequent to clearing and pruning that has recently occurred as part of the short-term emergency stabilization of these structures. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively natural resource management actions would result in local short-term and long-term negligible impacts on designated species and their habitat.

Development and maintenance of visitor use facilities that could potentially affect designated species and their habitat include the following:

- As in Alternatives 1 and 2, existing trails and administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. Maintenance would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. These actions would affect young trees that have grown up subsequent to clearing that has recently occurred as part of the emergency stabilization project. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area.

Routine maintenance of trails and administrative roads would result in a local long-term negligible impact on designated species and their habitat.

- Historic traces of most town roads would be cleared of invasive plants and maintained as stabilized trails with a gravel surface reseeded with native grasses. These actions would affect approximately 1.65 acres within these rights-of-way. Maintenance of the road traces would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into the rights-of-way. Tree removal would have the potential to displace Indiana bats during tree felling operations, but this potential would be low based on the low number of trees likely to exhibit roosting characteristics. To reduce the potential impact all trees within the rights-of-way would be inspected and those found to have cavities with evidence of bat roosting (e.g. guano deposits, etc.) would not be removed or they would be removed during the hibernation period from November 15th through March 31st. Mitigation for tree removal would include installation of bat condos in the vicinity of the conveyor that would provide additional summer roosting habitat. Road trace rehabilitation could also affect bat travel corridors by removing some overstory vegetation and completely removing understory vegetation on the trail bed. To reduce the potential for this to impact bat travel corridors trail beds would be reseeded with native grasses.

Rehabilitation of major town historic road traces would have a short-term minor adverse impact on designated species and their habitat. Routine maintenance of rehabilitated road traces would have a local long-term negligible impact on designated species and their habitat.

- In Alternative 3, trees would be thinned along the conveyor length to provide views from top to bottom, in the headhouse area to enhance rim to rim views, and in the Nuttallburg town site and the Seldom Seen site to enhance interior views. Tree thinning would have the potential to displace Indiana bats. To reduce the potential impact all trees within the area to be thinned would be inspected and those found to have cavities with evidence of bat roosting (e.g. guano deposits, etc.) would not be removed or they would be removed during the hibernation period from November 15th through March 31st. Mitigation for tree removal would include installation of bat condos in the vicinity of the conveyor that would provide additional summer roosting habitat.

Tree thinning along the conveyor length, in the headhouse area, in the Nuttallburg town site and the Seldom Seen site would have a local long-term minor adverse impact on designated species and their habitat.

- In Alternative 3, a new trail connection would be established from the headhouse to the tipple requiring clearing 0.69 acre of young trees, understory plants, and invasive plants within the trail right-of-way. Tree removal would have the potential to displace Indiana bats during tree felling operations, but this potential would be low based on the low number of trees likely to exhibit roosting characteristics. To reduce the potential impact all trees within the new trail right-of-way would be inspected and those found to have cavities with evidence of bat roosting (e.g. guano deposits, etc.) would not be removed or they would be removed during the hibernation period from November 15th through March 31st. Mitigation for tree removal would include installation of bat condos in the vicinity of the conveyor that would provide additional summer roosting habitat.

Construction of a new trail from the headhouse to the tipple would have a short-term minor adverse impact on designated species and their habitat. Routine maintenance of rehabilitated road traces would have a local long-term negligible impact on designated species and their habitat.

- In Alternative 3, construction of four new visitor parking facilities would involve clearing and grading of approximately 1.82 acres. Young secondary forest that characterizes the sites would be removed. Following construction approximately 1.62 acres would be committed to gravel-surface parking and approximately 0.20 acre in perimeter areas would be seeded with

native grasses. None of the parking facilities would be located within 2000 feet of the six abandoned mine portals in the site vicinity.

Clearing for parking facilities would result in a local long-term negligible impact on designated species and their habitat.

In Alternative 3, visitation is projected to be approximately 760 visitors on an average summer day. Most visitors would visit the lower portion of the site during daytime hours. Visitation to the area in the vicinity of the headhouse and abandoned mine openings would be limited to day use only. All abandoned mine portals within one mile of the headhouse would be gated and fenced to prevent visitor access and disturbance. Overall, visitor use would have a local long-term negligible impact on designated species and their habitat.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on designated species and their habitat are identified in Section 4.1 above. The cumulative impacts of these actions on designated species and their habitat are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on designated species and their habitat. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on designated species and their habitat. Alternative 3 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural resource and natural resource management actions in Alternative 3 would result in local short-term and long-term negligible impacts on designated species and their habitat. Rehabilitation of major town historic road traces would result in a short-term minor adverse impact on designated species and their habitat. Tree thinning along the conveyor length, in the headhouse area, in the Nuttallburg town site and the Seldom Seen site would have a local long-term minor adverse impact on designated species and their habitat. Construction of a new trail connection from the headhouse to the tipple would result in a local short-term minor adverse impact to designated species. Routine maintenance of trails, administrative roads, and rehabilitated historic road traces would result in a local long-term negligible impact on designated species and their habitat. Clearing for parking facilities would result in a local long-term negligible impact on designated species and their habitat. Projected visitor use associated with Alternative 3 would result in a local long-term negligible impact on designated species and their habitat. The collective management actions in Alternative 3 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on designated species and their habitat. There would be no impairment of designated species and their habitat.

■ **Alternative 4 – Impacts on Rare, Threatened, or Endangered Species and Their Habitats**

Analysis. As in Alternatives 1, 2, and 3, cultural resource management actions in the vicinity of the habitat of designated species would include long-term stabilization of the tipple, headhouse, and conveyor. These actions would generally include structural repairs, rust removal, and painting. Construction would occur during daytime hours. Staging areas and road access would be limited to areas previously cleared for short-term emergency stabilization actions that are already underway or completed. There would be no removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively the cultural resource management actions would result in local short-term and local long-term negligible impacts on designated species and their habitat.

As in Alternatives 1, 2, and 3, natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. New tree growth would be cleared or pruned along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. These actions would affect young trees that have grown up subsequent to the clearing and pruning that has recently

occurred as part of the short-term emergency stabilization of these structures. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area. Collectively natural resource management actions would result in local short-term and long-term negligible impacts on designated species and their habitat.

Development and maintenance of visitor use facilities that could potentially affect designated species and their habitat include the following:

- As in Alternative 1, existing trails and administrative roads would remain with no improvements other than routine maintenance needed to keep them open for hiking and administrative use, as appropriate. Maintenance would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. These actions would affect young trees that have grown up subsequent to the clearing that has recently occurred as part of the emergency stabilization project. It would not involve additional removal or trimming of large trees that may be used as roosts by rare bats known to inhabit the area.

Routine maintenance of trails and administrative roads would result in a local long-term negligible impact on designated species and their habitat.

- As in Alternatives 2 and 3, historic traces of major town roads would be cleared of invasive plants and maintained as stabilized trails with a gravel surface reseeded with native grasses. These actions would affect approximately 1.66 acres within these rights-of-way. Maintenance of the road traces would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into the rights-of-way. Tree removal would have the potential to displace Indiana bats during tree felling operations, but this potential would be low based on the low number of trees likely to exhibit roosting characteristics. To reduce the potential impact all trees within the rights-of-way would be inspected and those found to have cavities with evidence of bat roosting (e.g. guano deposits, etc.) would not be removed or they would be removed during the hibernation period from November 15th through March 31st. Mitigation for tree removal would include installation of bat condos in the vicinity of the conveyor that would provide additional summer roosting habitat. Road trace rehabilitation could also affect bat travel corridors by removing some overstory vegetation and completely removing understory vegetation on the trail bed. To reduce the potential for this to impact bat travel corridors trail beds would be reseeded with native grasses.

Rehabilitation of major town historic road traces would have a short-term minor adverse impact on designated species and their habitat. Routine maintenance of rehabilitated road traces would have a local long-term negligible impact on designated species and their habitat.

- In Alternative 3, trees would be thinned along the conveyor length to provide views from top to bottom, in the headhouse area to enhance rim to rim views, and in the Nuttallburg town site and the Seldom Seen site to enhance interior views. Tree removal would have the potential to displace Indiana bats. To reduce the potential impact all trees within the area to be thinned would be inspected and those found to have cavities with evidence of bat roosting (e.g. guano deposits, etc.) would not be removed or they would be removed during the hibernation period from November 15th through March 31st. Mitigation for tree removal would include installation of bat condos in the vicinity of the conveyor that would provide additional summer roosting habitat.

Tree thinning along the conveyor length, in the headhouse area, in the Nuttallburg town site and the Seldom Seen site would have a local long-term minor adverse impact on designated species and their habitat.

- As in Alternative 3 a new trail connection would be established from the headhouse to the tipple requiring clearing 0.69 acre of young trees, understory plants, and invasive plants within the trail right-of-way. Tree removal would have the potential to displace Indiana bats during tree felling operations, but this potential would be low based on the low number of trees likely to exhibit roosting characteristics. To reduce the potential impact all trees within the new trail right-of-way would be inspected and those found to have cavities with evidence of bat roosting (e.g. guano deposits, etc.) would not be removed or they would be removed during the hibernation period from November 15th through March 31st. Mitigation for tree removal would include installation of bat condos in the vicinity of the conveyor that would provide additional summer roosting habitat.

Construction of a new trail from the headhouse to the tipple would have a short-term minor adverse impact on designated species and their habitat. Routine maintenance of rehabilitated road traces would have a local long-term negligible impact on designated species and their habitat.

- In Alternative 4, construction of four new visitor parking facilities would involve clearing and grading of approximately 1.86 acres. Young secondary forest that characterizes the sites would be removed. Following construction approximately 1.65 acres would be committed to gravel-surface parking and approximately 0.19 acre in perimeter areas would be seeded with native grasses. None of the parking facilities would be located within 2000 feet of the six abandoned mine portals in the site vicinity.

Clearing for parking facilities would result in a local long-term negligible impact on designated species and their habitat.

In Alternative 4, visitation is projected to be approximately 915 visitors on an average summer day. Most visitors would visit the lower portion of the site during daytime hours. Visitation to the area in the vicinity of the headhouse and abandoned mine openings would be limited to day use only. All abandoned mine portals within one mile of the headhouse would be gated and fenced to prevent visitor access and disturbance. Overall, visitor use would have a local long-term negligible impact on designated species and their habitat.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on designated species and their habitat are identified in Section 4.1 above. The cumulative impacts of these actions on designated species and their habitat are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on designated species and their habitat. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on designated species and their habitat. Alternative 4 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. Cultural resource and natural resource management actions in Alternative 4 would result in local short-term and long-term negligible impacts on designated species and their habitat. Rehabilitation of major town historic road traces would result in a short-term minor adverse impact on designated species and their habitat. Tree thinning along the conveyor length, in the headhouse area, in the Nuttallburg town site and the Seldom Seen site would have a local long-term minor adverse impact on designated species and their habitat. Construction of a new trail connection from the headhouse to the tipple would result in a local short-term minor adverse impact to designated species. Routine maintenance of trails, administrative roads, and rehabilitated historic road traces would result in a local long-term negligible impact on designated species and their habitat. Clearing for parking facilities would result in a local long-term negligible impact on designated species and their habitat. Projected visitor use associated with Alternative 4 would result in a local long-term negligible impact on designated species and their habitat. The collective management actions in Alternative 4 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse

impact on designated species and their habitat. There would be no impairment of designated species and their habitat.

■ **Comparison of Impacts of the Alternatives – Rare, Threatened, or Endangered Species and Their Habitats**

Cultural resource and natural resource management actions in Alternatives 1, 2, 3, and 4 would result in local short-term and long-term negligible impacts on designated species and their habitat. Routine maintenance of trails and administrative roads in Alternative 1, 2, 3, and 4 would result in a local long-term negligible impact on designated species and their habitat. Rehabilitation and subsequent routine maintenance of major town historic road traces in Alternatives 2, 3, and 4, would result in a local short-term minor adverse impact and a local long-term negligible impact, respectively, on designated species and their habitat. Tree thinning along rehabilitated road traces and the conveyor in Alternatives 3 and 4 would result in a local long-term minor adverse impact on designated species and their habitat. Construction of a new trail connection from the headhouse to the tipple in Alternatives 3 and 4 would result in a local short-term minor adverse impact to designated species. Clearing for parking facilities in Alternatives 2, 3, and 4 would result in a local long-term negligible impact on designated species and their habitat. Projected visitor use associated with Alternatives 1, 2, 3, and 4 would result in a local long-term negligible impact on designated species and their habitat.

Alternative 1 would contribute an imperceptible increment to the total cumulative moderate adverse impact on designated species and their habitat. Alternatives 1, 2, 3, and 4 would contribute an imperceptible adverse increment to the total cumulative moderate adverse impact on designated species and their habitat. None of the alternatives would result in an impairment of park resources or values related to designated species and their habitat.

4.5 Cultural Landscapes

■ **Applicable Regulations and Guidelines**

Regulations and guidelines related to cultural landscapes include the following:

- Advisory Council on Historic Preservation implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Antiquities Act of 1906
- National Historic Preservation Act of 1966, as amended
- Executive Order 11593 – Protection and Enhancement of Cultural Environment
- Director's Order #28 – Cultural Resources Management Guidelines
- NPS 2006 Management Policies

■ **Methodology and Assumptions**

In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), effects to cultural resources are identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected National Register-eligible or listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council's regulations a determination of either *adverse effect* or *no adverse effect* must also be made for affected National Register-eligible or listed cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource

that qualifies it for inclusion in the National Register, e.g. diminishing the integrity (or the extent which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Definitions of Impact Intensity Levels

Negligible: Impact(s) is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be *no adverse effect*.

Minor: **Adverse Impact** – Alteration of a pattern(s) or feature(s) of the landscape would not diminish the overall integrity of the landscape. The determination of effect for Section 106 would be *no adverse effect*.

Beneficial Impact – Preservation of a landscape pattern(s) and feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. The determination of effect for Section 106 would be *no adverse effect*.

Moderate: **Adverse Impact** – Alteration of a pattern(s) of feature(s) of the landscape would diminish the overall integrity of the character-defining pattern(s) or feature(s) of the cultural landscape but would not diminish the integrity of the landscape to the extent that its National Register eligibility is jeopardized. The determination of effect for Section 106 would be *adverse effect*. A memorandum of agreement is executed among the NPS and applicable state or tribal historic preserver officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.

Beneficial Impact – Rehabilitation of a landscape or its pattern(s) and feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. The determination of effect under Section 106 would be *no adverse effect*.

Major: **Adverse Impact** – Alteration of a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the landscape to the extent that it is no longer eligible to be listed on the National Register. The determination of effect for Section 106 would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Beneficial Impact – Restoration of a landscape or its pattern(s) or feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. The determination of effect for Section 106 would be *no adverse effect*.

■ **Alternative 1 (Continuation of Existing Management) – Impacts on Cultural Landscapes**

Analysis. In Alternative 1, cultural resource management actions would be implemented to preserve some aspects of the landscape pattern and features of the site that convey its significance as a 20th century mining complex and town. This would include long-term stabilization of the tipple, conveyor, and headhouse. Following stabilization structures would be monitored to identify other potential risks of collapse that could jeopardize their integrity. As needed, other minor actions would be taken to protect foundations and other remains and artifacts at the town site. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on cultural landscape resources.

Natural resources would continue to be minimally managed except where vegetation growth has the potential to damage cultural landscape features. The town site would generally be kept open as would areas around mining complex buildings and along the conveyor. Invasive plants – particularly kudzu, Japanese knotweed, and multiflora rose – would be controlled through cutting, mowing, and selective application of Herbicides. This would reveal the community's historic layout and help to maintain the integrity of the remaining landscape structural features, including cut stone building foundations, stone retaining walls, fire hydrants, well covers, railroad markers, rail lines, and abandoned mining cars. Collectively these natural resource management actions would have a local long-term minor beneficial impact on cultural landscape resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscape resources are identified in Section 4.1 above. These generally include growth and development on private property and public development and transportation system improvements. No local public policies or regulations are in place to protect cultural landscapes on private land during the land development process. As a result past development on private land within the park boundary has occurred without consideration of cultural landscapes, resulting in adverse impacts. This could change on a site-specific basis in the future where the NPS is able to successfully cooperate with owners of remaining private land within the park boundary whose properties include significant cultural landscapes. Public development and transportation system projects with federal funding are required to mitigate potential adverse effects to cultural landscapes in accordance with Section 106 of the NHPA. These other actions have contributed or will contribute long-term moderate adverse impacts on cultural landscape resources. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscape resources. Alternative 1 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to cultural landscapes.

Conclusion. Cultural and natural resource management actions in Alternative 1 would have local long-term minor beneficial impacts on cultural landscape resources. The collective management actions in Alternative 1 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on cultural landscape resources. There would be no impairment of cultural landscape resources in the park.

■ **Alternative 2 (Preferred Alternative) – Impacts on Cultural Landscapes**

Analysis. As in Alternative 1, cultural resource management actions would be implemented to preserve some aspects of the remaining landscape pattern and features of the site necessary to convey its significance as a 20th century mining complex and town. In addition actions would be taken to rehabilitate one or two coke ovens, to rehabilitate and maintain traces of major town roads as trails and to rehabilitate foundation masonry for a limited number of structures associated with community

life at the town of Nuttallburg. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on cultural landscape resources.

As in Alternative 1, natural resources would continue to be minimally managed except where vegetation growth has the potential to damage cultural landscape features. Collectively natural resource management actions would have a local long-term minor beneficial impact on cultural landscape resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscape resources are identified in Section 4.1 above. The cumulative impacts of these actions on cultural landscapes are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on cultural landscape resources. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscape resources. Alternative 2 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to cultural landscapes.

Conclusion. Cultural and natural resource management actions in Alternative 2 would have local long-term minor beneficial impacts on cultural landscape resources. The collective management actions in Alternative 2 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on cultural landscape resources. There would be no impairment of cultural landscape resources in the park.

■ Alternative 3 – Impacts on Cultural Landscapes

Analysis. As in Alternatives 1 and 2, cultural resource management actions would be implemented to preserve many aspects of the remaining landscape pattern and features of the site necessary to convey its significance as a 20th century mining complex and town. In addition actions would be taken as in Alternative 2 to rehabilitate and maintain traces of major town roads as trails, to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg, and to protect foundations and other remains and artifacts at the town site. In Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on cultural landscapes.

As in Alternatives 1 and 2 natural resources would continue to be minimally managed except where vegetation growth has the potential to damage cultural landscape resources. In addition trees along road traces in the town and along the conveyor length would be thinned. Collectively these natural resource management actions would have a local long-term minor beneficial impact on cultural landscape resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscape resources are identified in Section 4.1 above. The cumulative impacts of these actions on cultural landscapes are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on cultural landscape resources. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscape resources. Alternative 3 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to cultural landscapes.

Conclusion. Cultural and natural resource management actions in Alternative 3 would have local long-term minor beneficial impacts on cultural landscape resources. The collective management actions in Alternative 3 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on cultural landscape resources. There would be no impairment of cultural landscape resources in the park.

■ **Alternative 4 – Impacts on Cultural Landscapes**

Analysis. As in Alternatives 1, 2, and 3, cultural resource management actions would be implemented to preserve many aspects of the remaining landscape pattern and features of the site necessary to convey its significance as a 20th century mining complex and town. In addition actions would be taken as in Alternative 2 to rehabilitate and maintain traces of major town roads as trails, to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg, and to protect foundations and other remains and artifacts at the town site. As in Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on cultural landscapes.

As in Alternative 1, 2, and 3 natural resources would continue to be minimally managed except where vegetation growth has the potential to damage cultural landscape resources. As in Alternative 3, in addition trees along road traces in the town and along the conveyor length would be thinned. Collectively these natural resource management actions would have a local long-term minor beneficial impact on cultural landscape resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on cultural landscape resources are identified in Section 4.1 above. The cumulative impacts of these actions on cultural landscapes are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on cultural landscape resources. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on cultural landscape resources. Alternative 4 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to cultural landscapes.

Conclusion. Cultural and natural resource management actions in Alternative 4 would have local long-term minor beneficial impacts on cultural landscape resources. The collective management actions in Alternative 4 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on cultural landscape resources. There would be no impairment of cultural landscape resources in the park.

■ **Comparison of Impacts of the Alternatives – Cultural Landscapes**

Cultural and natural resource management actions in Alternatives 1, 2, 3, and 4 would each result in a local long-term minor beneficial impact on cultural landscape resources. Each alternative would contribute an imperceptible beneficial increment to the total cumulative moderate adverse impact on cultural landscape resources. None of the alternatives would result in an impairment of park resources or values related to cultural landscape resources.

4.6 Historic Buildings and Structures

■ Applicable Regulations and Guidelines

Regulations and guidelines related to historic buildings and structures include the following:

- Advisory Council on Historic Preservation implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Antiquities Act of 1906
- Historic Sites, Buildings, and Antiquities Act of 1935, as amended
- National Historic Preservation Act of 1966, as amended
- Secretary of the Interior's Standards for Treatment of Historic Properties (1966)
- Executive Order 11593 – Protection and Enhancement of Cultural Environment
- Director's Order #28 – Cultural Resources Management Guidelines
- NPS 2006 Management Policies

■ Methodology and Assumptions

In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), effects to cultural resources are identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected National Register-eligible or listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council's regulations a determination of either *adverse effect* or *no adverse effect* must also be made for affected National Register-eligible or listed cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register, e.g. diminishing the integrity (or the extent which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Definitions of Impact Intensity Levels

Negligible: Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be *no adverse effect*.

Minor: **Adverse Impact** – Alteration of a feature(s) would not diminish the overall integrity of the structure or building. The determination of effect for Section 106 would be *no adverse effect*.

Beneficial Impact – Stabilization/preservation of character-defining feature(s) in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Historic Properties*. The determination of effect for Section 106 would be *no adverse effect*.

Moderate: **Adverse Impact** – Alteration of a character defining feature(s) of the structure or building would not diminish the integrity of the resource to the extent that its National Register eligibility is jeopardized. The determination of effect for Section 106 would be *adverse effect*. A memorandum of agreement is executed among the National Park Service and applicable state or tribal historic preserver officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.

Beneficial Impact – Rehabilitation of a structure or building in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The determination of effect under Section 106 would be *no adverse effect*.

Major: **Adverse Impact** – Alteration of a character-defining feature(s) of the structure or building that diminishes the integrity of the resource to the extent that it is no longer eligible to be listed on the National Register. The determination of effect for Section 106 would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Beneficial Impact – Restoration of a structure or building in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

■ **Alternative 1 Continuation of Existing Management) – Impacts on Historic Buildings and Structures**

Analysis. In Alternative 1, cultural resource management actions would be implemented for long-term stabilization of the tipple, headhouse, and conveyor. Following stabilization structures would be monitored to identify other potential risks of collapse that could jeopardize their integrity. As needed, other minor actions would be taken to protect foundations and other remains and artifacts at the town site. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on historic buildings and structures.

Natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. The town site would generally be kept open as would areas around mining complex buildings and along the conveyor. Invasive plants – particularly kudzu, Japanese knotweed, and multiflora rose – would be controlled through cutting, mowing, and selective application of herbicides. New tree growth would be cleared or pruned along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. Collectively these natural resource management actions would have a local long-term minor beneficial impact on historic buildings and structures.

While visitors would not be encouraged to visit the site, there could be some increase in visitation when compared to recent years due to recently completed trail improvements in the Nuttallburg area. Because NPS would continue to remove invasive plants from historic areas, the few visitors who discover the site would have a greater opportunity to climb into or on historic buildings and structures thereby exposing historic resources to potential visitor impacts. Overall, visitor use would have a local long-term negligible impact on historic buildings and structures.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic buildings and structures are identified in Section 4.1 above. These generally include growth and development on private property and public development and transportation system improvements. No local public policies or regulations are in place to protect historic structures on private land during the land development process. Public development and

transportation system projects with federal funding are required to mitigate potential adverse effects to historic structures in accordance with Section 106 of the NHPA. These other actions have contributed or will contribute long-term moderate adverse impacts on historic buildings and structures. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on historic buildings and structures. Alternative 1 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to historic buildings and structures.

Conclusion. Cultural and natural resource management actions in Alternative 1 would have local long-term minor beneficial impacts on historic buildings and structures. Projected visitor use associated with Alternative 1 would have a local long-term negligible impact on historic buildings and structures. The collective management actions in Alternative 1 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on historic buildings and structures. There would be no impairment of historic buildings and structures in the park.

■ **Alternative 2 (Preferred Alternative) – Impacts on Historic Buildings and Structures**

Analysis. As in Alternative 1, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse, as well as minor actions to protect foundations at the town site. In addition actions would be taken to rehabilitate one or two coke ovens and to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on historic buildings and structures.

As in Alternative 1, natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. In addition, in Alternative 2 a few small bat condos would be installed in the conveyor and headhouse structures; these would be designed and installed to avoid adverse impacts to historic buildings and structures. Collectively natural resource management actions would have a local long-term minor beneficial impact on historic buildings and structures.

Visitation is projected to increase to approximately 460 visitors on an average summer day as a result of the addition of visitor use facilities and interpretive media at the site. People would be encouraged to visit the site. Because NPS would continue to remove invasive plants from historic areas, visitors would have a greater opportunity to climb into or on historic buildings and structures thereby exposing historic resources to potential visitor impacts. Overall, visitor use would have a local long-term minor adverse impact on historic buildings and structures.

Four new parking areas would provide parking for visitors, one of which would include 5 spaces located within and adjacent to the right-of-way of the historic Keeney Creek Branch Line. Construction would require minimal surface grading and placement of crushed stone. This would have a local, long-term minor adverse impact on the historic structure.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic buildings and structures are identified in Section 4.1 above. The cumulative impacts of these actions on historic buildings and structures are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on historic buildings and structures. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact on historic buildings and structures. Alternative 2 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to historic buildings and structures.

Conclusion. Cultural and natural resource management actions in Alternative 2 would have local long-term minor beneficial impacts on historic buildings and structures. Projected visitor use associated with Alternative 2 would have a local long-term negligible impact on historic buildings and structures. Development of new visitor use facilities associated with Alternative 2 would have a long-term minor adverse impact on historic buildings and structures. The collective management actions in Alternative 2 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on historic buildings and structures. There would be no impairment of historic buildings and structures in the park.

■ **Alternative 3 – Impacts on Historic Buildings and Structures**

Analysis. As in Alternatives 1 and 2, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse, as well as minor actions to protect foundations at the town site. In addition actions would be taken as in Alternative 2 to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. In Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on historic buildings and structures.

As in Alternatives 1 and 2 natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. As in Alternative 2, a few small bat condos would be installed in the conveyor and headhouse structures; these would be designed and installed to avoid adverse impacts to historic buildings and structures. In addition trees along road traces in the town and along the conveyor length would be thinned. Collectively these natural resource management actions would have a local long-term minor beneficial impact on historic buildings and structures.

Visitation is projected to increase to approximately 760 visitors on an average summer day as a result of the addition of visitor use facilities and interpretive media at the site. People would be encouraged to visit the site. Because NPS would continue to remove invasive plants from historic areas, visitors would have a greater opportunity to climb into or on historic buildings and structures thereby exposing historic resources to potential visitor impacts. Overall, visitor use would have a local long-term minor adverse impact on historic buildings and structures.

Four new parking areas would provide parking for visitors, one of which would include 5 spaces located within and adjacent to the right-of-way of the historic Keeney Creek Branch Line (as in Alternative 2). Construction would require minimal surface grading and placement of crushed stone. This would result in a local, long-term minor adverse impact on the historic structure.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic buildings and structures are identified in Section 4.1 above. The cumulative impacts of these actions on historic buildings and structures are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on historic buildings and structures. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact on historic buildings and structures. Alternative 3 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to historic buildings and structures.

Conclusion. Cultural and natural resource management actions in Alternative 3 would have local long-term minor beneficial impacts on historic buildings and structures. Projected visitor use associated with Alternative 3 would have a local long-term minor adverse impact on historic buildings and structures. Development of new visitor use facilities associated with Alternative 3 would have a long-term minor adverse impact on historic buildings and structures. The collective management actions in Alternative 3 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on historic buildings and structures. There would be no impairment of historic buildings and structures in the park.

■ **Alternative 4 – Impacts on Historic Buildings and Structures**

Analysis. As in Alternatives 1, 2, and 3, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse, as well as minor actions to protect foundations at the town site. In addition actions would be taken as in Alternative 2 to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. As in Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. Collectively these cultural resource management actions would result in a local long-term minor beneficial impact on historic buildings and structures.

As in Alternatives 1, 2, and 3 natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. As in Alternatives 2 and 3, a few small bat condos would be installed in the conveyor and headhouse structures; these would be designed and installed to avoid adverse impacts to historic buildings and structures. As in Alternative 3, trees along road traces in the town and along the conveyor length would be thinned. Collectively these natural resource management actions would have a local long-term minor beneficial impact on historic buildings and structures.

Visitation is projected to increase to approximately 920 visitors on an average summer day as a result of the addition of visitor use facilities and interpretive media at the site. People would be encouraged to visit the site. Because NPS would continue to remove invasive plants from historic areas, visitors would have a greater opportunity to climb into or on historic buildings and structures thereby exposing historic resources to potential visitor impacts. Overall, visitor use would have a local long-term minor adverse impact on historic buildings and structures.

Four new parking areas would provide parking for visitors (as in Alternative 2), one of which would include 5 spaces located within and adjacent to the right-of-way of the historic Keeney Creek Branch Line (as in Alternatives 2 and 3). Construction would require minimal surface grading and placement of crushed stone. This would result in a local, long-term minor adverse impact on the historic structure.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on historic buildings and structures are identified in Section 4.1 above. The cumulative impacts of these actions on historic buildings and structures are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on historic buildings and structures. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact on historic buildings and structures. Alternative 4 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to historic buildings and structures.

Conclusion. Cultural and natural resource management actions in Alternative 4 would have local long-term minor beneficial impacts on historic buildings and structures. Projected visitor use

associated with Alternative 4 would have a local long-term minor adverse impact on historic buildings and structures. Development of new visitor use facilities associated with Alternative 4 would have a long-term minor adverse impact on historic buildings and structures. The collective management actions in Alternative 4 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on historic buildings and structures. There would be no impairment of historic buildings and structures in the park.

■ **Comparison of Impacts of the Alternatives – Historic Buildings and Structures**

Cultural and natural resource management actions in Alternatives 1, 2, 3, and 4 would each result in a local long-term minor beneficial impact on historic buildings and structures. Visitor use in Alternatives 1 and 2 would have a negligible impact on historic buildings and structures, while increased visitor use in Alternatives 3 and 4 would have a local long-term minor adverse impact on historic buildings and structures. Development of new visitor use facilities associated with Alternatives 2, 3, and 4 would have a long-term minor adverse impact on historic buildings and structures.

Each alternative would contribute an imperceptible beneficial increment to the total cumulative moderate adverse impact on historic buildings and structures. None of the alternatives would result in an impairment of park resources or values related to historic buildings and structures.

4.7 Archeological Resources

■ **Applicable Regulations and Guidelines**

Regulations and guidelines related to archeological resources include the following:

- 36 CFR 79 – Curation of Federally-Owned and Administered Archaeological Collections
- Advisory Council on Historic Preservation implementing regulations regarding the “Protection of Historic Properties” (36 CFR Part 800)
- Archaeological Resources Protection Act of 1979, as amended
- National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990
- Secretary of the Interior’s Standards for Treatment of Historic Properties (1966)
- Executive Order 11593 – Protection and Enhancement of Cultural Environment
- Executive Order 13007 – American Indian Sacred Sites
- Director’s Order #28 – Cultural Resources Management Guidelines
- NPS 2006 Management Policies

■ **Methodology and Assumptions**

In accordance with the Advisory Council on Historic Preservation’s regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), effects to cultural resources are identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected National Register-eligible or listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council’s regulations a determination of either *adverse effect* or *no adverse effect* must also be made for affected National Register-eligible or listed cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource

that qualifies it for inclusion in the National Register, e.g. diminishing the integrity (or the extent which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Definitions of Impact Intensity Levels

Negligible: Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be *no adverse effect*.

Minor: **Adverse Impact** – Disturbance of a site(s) results in little, if any, loss of integrity. The determination of effect for Section 106 would be *no adverse effect*.

Beneficial Impact – Maintenance and preservation of a site(s). The determination of effect for Section 106 would be *no adverse effect*.

Moderate: **Adverse Impact** – Disturbance of a site(s) does not diminish the integrity of the site(s) to the extent that its National Register eligibility is jeopardized. The determination of effect for Section 106 would be *adverse effect*. A memorandum of agreement is executed among the NPS and applicable state or tribal historic preserver officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.

Beneficial Impact – Stabilization of a site(s). The determination of effect for Section 106 would be *no adverse effect*.

Major: **Adverse Impact** – Disturbance of a site(s) diminishes the integrity of the site(s) to the extent that it is no longer eligible for listing on the National Register. The determination of effect for Section 106 would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the NPS and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Beneficial Impact – Active intervention to preserve a site(s). The determination of effect would be *no adverse effect*.

■ **Alternative 1 (Continuation of Existing Management) – Impacts on Archeological Resources**

Analysis. In Alternative 1, cultural resource management actions to protect foundations and other remains and artifacts at the mining complex and town site would have the potential to impact archeological resources. These actions would be preceded by an archeological survey to identify and avoid any archeological resources. Where resources could not be avoided, there could be negligible to moderate adverse impacts. If any unknown significant resources are uncovered during ground-disturbing activities, procedures to implement Section 106 of the National Historic Preservation Act (NHPA) would be instituted.

Natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tippie, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. These actions would control the growth of large trees that could otherwise damage intact archeological resources likely to be present in these areas. They

would be implemented to avoid ground surface disturbance. Other management actions at the site would include revegetation of the ground surface with native plant species, protecting surface soils from erosion and underlying potential archeological resources from exposure. Collectively these natural resource management actions would result in a local long-term minor beneficial impact on archeological resources.

While visitors would not be encouraged to visit the site, there could be some increase in visitation when compared to recent years due to recently completed trail improvements in the Nuttallburg area. Because NPS would continue to remove invasive plants from historic areas, the few visitors who discover the site would have a greater opportunity to explore the site exposing the ground surface to compaction and trampling through off-trail visitor use. The lack of interpretation of archeological resources at the site would also contribute to the public's lack of awareness, appreciation, and spirit of stewardship of archeological resources. Overall, visitor use would have a local long-term negligible impact on archeological resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.1 above. These generally include development on private property, public development projects, and transportation system improvements. No local public policies or regulations are in place to protect archeological resources on private land during the land development process. Public development and transportation system projects with federal funding are required to mitigate potential adverse effects to archeological resources in accordance with Section 106 of the NHPA. These other actions have contributed or will contribute long-term moderate adverse impacts on archeological resources. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on archeological resources. Alternative 1 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to archeological resources.

Conclusion. Cultural resource management actions in Alternative 1 would have local long-term negligible to moderate adverse impacts on archeological resources. Natural resource management actions in Alternative 1 would have a long-term minor beneficial impact on archeological resources. Projected visitor use associated with Alternative 1 would have a local long-term negligible impact on archeological resources. The collective management actions in Alternative 1 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of archeological resources in the park.

■ **Alternative 2 (Preferred Alternative) – Impacts on Archeological Resources**

Analysis. As in Alternative 1, cultural resource management actions to protect foundations and other remains and artifacts at the mining complex and town site would have the potential to impact archeological resources. In addition actions would be taken to rehabilitate one or two coke ovens, to rehabilitate and maintain traces of major town roads as trails, and to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg. These actions would be preceded by an archeological survey to identify and avoid any archeological resources. Where resources could not be avoided, there could be negligible to moderate adverse impacts. If any unknown significant resources are uncovered during ground-disturbing activities, procedures to implement Section 106 of the National Historic Preservation Act (NHPA) would be instituted.

As in Alternative 1, natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. Collectively these natural

resource management actions would result in a local long-term minor beneficial impact on archeological resources.

Visitation is projected to increase to approximately 460 visitors on an average summer day as a result of the addition of visitor use facilities and interpretive media at the site. Because NPS would continue to remove invasive plants from historic areas, the few visitors who discover the site would have a greater opportunity to explore the site exposing the ground surface to compaction and trampling through off-trail visitor use. The lack of interpretation of archeological resources at the site would also contribute to the public's lack of awareness, appreciation, and spirit of stewardship of archeological resources. Overall, visitor use would have a local long-term minor adverse impact on archeological resources.

Construction of new visitor use facilities (town trails and 4 parking areas with 45 total spaces) would be preceded by an archeological survey to identify and avoid any archeological resources. Where resources could not be avoided, there could be negligible to moderate adverse impacts. If any unknown significant resources are uncovered during ground-disturbing activities, procedures to implement Section 106 of the National Historic Preservation Act (NHPA) would be instituted.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.1 above. The cumulative impacts of these actions on archeological resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on archeological resources. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term minor adverse impact on archeological resources. Alternative 2 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to archeological resources.

Conclusion. Cultural resource management actions in Alternative 2 and development of new visitor use facilities would have local long-term negligible to moderate adverse impacts on archeological resources. Natural resource management actions in Alternative 2 would have a long-term minor beneficial impact on archeological resources. Projected visitor use associated with Alternative 2 would have a local long-term negligible impact on archeological resources. The collective management actions in Alternative 2 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of archeological resources in the park.

■ Alternative 3 – Impacts on Archeological Resources

Analysis. As in Alternatives 1 and 2, cultural resource management actions to protect foundations and other remains and artifacts at the mining complex and town site would have the potential to impact archeological resources. In addition actions would be taken as in Alternative 2 to rehabilitate and maintain traces of major town roads as trails, to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg, and to protect foundations and other remains and artifacts at the town site. In Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. These actions would be preceded by an archeological survey to identify and avoid any archeological resources. Where resources could not be avoided, there could be negligible to moderate adverse impacts. If any unknown significant resources are uncovered during ground-disturbing activities, procedures to implement Section 106 of the National Historic Preservation Act (NHPA) would be instituted.

As in Alternatives 1 and 2, natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tippie, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. Tree thinning included in

Alternative 3 would not involve ground surface disturbance. Collectively these natural resource management actions would result in a local long-term minor beneficial impact on archeological resources.

Visitation is projected to increase to approximately 760 visitors on an average summer day as a result of the addition of visitor use facilities and interpretive media at the site. Because NPS would continue to remove invasive plants from historic areas, the few visitors who discover the site would have a greater opportunity to explore the site exposing the ground surface to compaction and trampling through off-trail visitor use. The lack of interpretation of archeological resources at the site would also contribute to the public's lack of awareness, appreciation, and spirit of stewardship of archeological resources. Overall, visitor use would have a local long-term minor adverse impact on archeological resources.

Construction of new visitor use facilities (town trails, headhouse to town trail connection, and 4 parking areas with 64 total spaces) would be preceded by an archeological survey to identify and avoid any archeological resources. Where resources could not be avoided, there could be negligible to moderate adverse impacts. If any unknown significant resources are uncovered during ground-disturbing activities, procedures to implement Section 106 of the National Historic Preservation Act (NHPA) would be instituted.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.1 above. The cumulative impacts of these actions on archeological resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on archeological resources. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on archeological resources. Alternative 3 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to archeological resources.

Conclusion. Cultural resource management actions in Alternative 3 and development of new visitor use facilities would have local long-term negligible to moderate adverse impacts on archeological resources. Natural resource management actions in Alternative 3 would have a long-term minor beneficial impact on archeological resources. Projected visitor use associated with Alternative 3 would have a local long-term minor adverse impact on archeological resources. The collective management actions in Alternative 3 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of archeological resources in the park.

■ **Alternative 4 – Impacts on Archeological Resources**

Analysis. As in Alternatives 1, 2, and 3, cultural resource management actions to protect foundations and other remains and artifacts at the mining complex and town site would have the potential to impact archeological resources. In addition actions would be taken as in Alternative 2 to rehabilitate and maintain traces of major town roads as trails, to rehabilitate foundation masonry for a limited number of structures associated with the community life at the town of Nuttallburg, and to protect foundations and other remains and artifacts at the town site. As in Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. These actions would be preceded by an archeological survey to identify and avoid any archeological resources. Where resources could not be avoided, there could be negligible to moderate adverse impacts. If any unknown significant resources are uncovered during ground-disturbing activities, procedures to implement Section 106 of the National Historic Preservation Act (NHPA) would be instituted.

As in Alternative 1, 2, and 3, natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. As in Alternative 3 tree thinning included in Alternative 4 would not involve ground surface disturbance. Collectively these natural resource management actions would result in a local long-term minor beneficial impact on archeological resources.

Visitation is projected to increase to approximately 920 visitors on an average summer day as a result of the addition of visitor use facilities and interpretive media at the site. Because NPS would continue to remove invasive plants from historic areas, the few visitors who discover the site would have a greater opportunity to explore the site exposing the ground surface to compaction and trampling through off-trail visitor use. The lack of interpretation of archeological resources at the site would also contribute to the public's lack of awareness, appreciation, and spirit of stewardship of archeological resources. Overall, visitor use would have a local long-term minor adverse impact on archeological resources.

Construction of new visitor use facilities (town trails, headhouse to town trail connection, trail to Kaymoor, New River footbridge, and 4 parking areas with 68 total spaces) (parking areas, town trails, headhouse to town trail connection,) would be preceded by an archeological survey to identify and avoid any archeological resources. Where resources could not be avoided, there could be negligible to moderate adverse impacts. If any unknown significant resources are uncovered during ground-disturbing activities, procedures to implement Section 106 of the National Historic Preservation Act (NHPA) would be instituted.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on archeological resources are identified in Section 4.1 above. The cumulative impacts of these actions on archeological resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on archeological resources. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on archeological resources. Alternative 4 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to archeological resources.

Conclusion. Cultural resource management actions in Alternative 4 and development of new visitor use facilities would have local long-term negligible to moderate adverse impacts on archeological resources. Natural resource management actions in Alternative 4 would have a long-term minor beneficial impact on archeological resources. Projected visitor use associated with Alternative 4 would have a local long-term minor adverse impact on archeological resources. The collective management actions in Alternative 4 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on archeological resources. There would be no impairment of archeological resources in the park.

■ Comparison of Impacts of the Alternatives – Archeological Resources

Cultural resource management actions in Alternative 1, 2, 3, and 4 would have local long-term negligible to moderate adverse impacts on archeological resources. Natural resource management actions in Alternatives 1, 2, 3, and 4 would have local long-term minor beneficial impacts on archeological resources. Projected visitor use associated with Alternative 1 would have a local long-term negligible impact on archeological resources, while projected visitor use associated with Alternatives 2, 3 and 4 would have a local long-term minor adverse impact on archeological resources.

Each alternative would contribute an imperceptible beneficial increment to the total cumulative moderate adverse impact on archeological resources. None of the alternatives would result in an impairment of park resources or values related to archeological resources.

4.8 Ethnographic Resources

■ Applicable Regulations and Guidelines

Regulations and guidelines related to ethnographic resources include the following:

- Advisory Council on Historic Preservation implementing regulations regarding the "Protection of Historic Properties" (36 CFR Part 800)
- National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990
- Secretary of the Interior's Standards for Treatment of Historic Properties (1966)
- Executive Order 11593 – Protection and Enhancement of Cultural Environment
- Executive Order 13007 – American Indian Sacred Sites
- Director's Order #28 – Cultural Resources Management Guidelines
- NPS 2006 Management Policies

■ Methodology and Assumptions

In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), effects to cultural resources are identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected National Register-eligible or listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council's regulations a determination of either *adverse effect* or *no adverse effect* must also be made for affected National Register-eligible or listed cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register, e.g. diminishing the integrity (or the extent to which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Definitions of Impact Intensity Levels

Negligible: Impact(s) would be barely perceptible and would neither alter resource conditions, such as traditional access or site preservation, nor the relationship between the resources and the affiliated group's body of practices and beliefs. The determination of effect on traditional cultural properties (ethnographic resources eligible to be listed in the National Register) for Section 106 would be *no adverse effect*.

Minor: **Adverse Impact** – Impact(s) would be slight but noticeable but would neither appreciably alter resource conditions, such as traditional access or site preservation, and beliefs. The determination of effect on traditional cultural properties

(ethnographic resources eligible to be listed in the National Register) for Section 106 would be *no adverse effect*.

Beneficial Impact – Action(s) would allow access to and/or accommodate a group’s traditional practices or beliefs. The determination of effect on traditional cultural properties for Section 106 would be no adverse effect.

Moderate: **Adverse Impact** – Impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group’s practices and beliefs, even though the group’s practices and beliefs would survive. The determination of effect on traditional cultural properties (ethnographic resources eligible to be listed in the National Register) for Section 106 would be *adverse effect*.

Beneficial Impact – Action(s) would facilitate traditional access and/or accommodate a group’s practices or beliefs. The determination of effect on traditional cultural properties for Section 106 would be no adverse effect.

Major: **Adverse Impact** – Impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation or the relationship between the resource and the affiliated group’s body of practices and beliefs, to the extent that the survival of a group’s practices and/or beliefs would be jeopardized. The determination of effect on traditional cultural properties (ethnographic resources eligible to be listed in the National Register) for Section 106 would be *adverse effect*.

Beneficial Impact – Action(s) would encourage traditional access and/or accommodate a group’s practices or beliefs. The determination of effect on traditional cultural properties for Section 106 would be no adverse effect.

■ **Alternative 1 (Continuation of Existing Management) – Impacts on Ethnographic Resources**

Analysis. In Alternative 1, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. These actions would protect buildings and a structure that are ethnographic resources important to former residents and descendents of former residents who have long-standing ties and strong persistent associations with the town of Nuttallburg. Collectively the cultural resource management actions would result in a local long-term moderate beneficial impact on ethnographic resources.

Natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. These actions also protect and make accessible structures and buildings that are ethnographic resources important to former residents and descendents of former residents who have long-standing ties and strong persistent associations with the town. Collectively the natural resource management actions would result in a local long-term moderate beneficial impact on ethnographic resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.1 above. These generally include growth and development on private property and public development and transportation system improvements. No local public policies or regulations are in place to protect ethnographic resources on private land during the land development process. Public development and transportation system projects with federal funding are required to mitigate potential adverse effects to ethnographic resources in accordance with Section 106 of the NHPA. These other actions have contributed or will contribute long-term moderate adverse impacts on ethnographic resources. The

impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 1 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to ethnographic resources.

Conclusion. Cultural and natural resource management actions in Alternative 1 would have local long-term moderate beneficial impacts on ethnographic resources. The collective management actions in Alternative 1 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of ethnographic resources in the park.

■ **Alternative 2 (Preferred Alternative) – Impacts on Ethnographic Resources**

Analysis. As in Alternative 1, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. In addition actions would be taken to rehabilitate one or two coke ovens, to rehabilitate and maintain traces of major town roads as trails, and to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg. These actions would protect structures and buildings that are ethnographic resources important to former residents and descendants of former residents who have long-standing ties and strong persistent associations with the town. They would also facilitate traditional access. Collectively the cultural resource management actions would result in a local long-term moderate beneficial impact on ethnographic resources.

As in Alternative 1, natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. Collectively the natural resource management actions would result in a local long-term moderate beneficial impact on ethnographic resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.1 above. The cumulative impacts of these actions on ethnographic resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on ethnographic resources. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 2 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to ethnographic resources.

Conclusion. Cultural and natural resource management actions in Alternative 2 would have local long-term moderate beneficial impacts on ethnographic resources. The collective management actions in Alternative 2 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of ethnographic resources in the park.

■ **Alternative 3 – Impacts on Ethnographic Resources**

Analysis. As in Alternatives 1 and 2, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. As in Alternative 2, additional actions would be taken to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. In Alternative 3 rehabilitation of the coke ovens would be expanded to include a

bank of 10 coke ovens. Rehabilitation of historic traces would be expanded to include most town roads. Trees would also be thinned in the Nuttallburg town site, the Seldom Seen site, the headhouse area, and along the conveyor length. These actions would protect structures and buildings that are ethnographic resources important to former residents and descendants of former residents who have long-standing ties and strong persistent associations with the town. They would also facilitate traditional access. Collectively the cultural resource management actions would result in a local long-term moderate beneficial impact on ethnographic resources.

As in Alternatives 1 and 2, natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. In Alternative 3, trees would also be thinned in the Nuttallburg town site, the Seldom Seen site, the headhouse area, and along the conveyor length. Collectively the natural resource management actions would result in a local long-term moderate beneficial impact on ethnographic resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.1 above. The cumulative impacts of these actions on ethnographic resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on ethnographic resources. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 3 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to ethnographic resources.

Conclusion. Cultural and natural resource management actions in Alternative 3 would have local long-term moderate beneficial impacts on ethnographic resources. The collective management actions in Alternative 3 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of ethnographic resources in the park.

■ Alternative 4 – Impacts on Ethnographic Resources

Analysis. As in Alternatives 1, 2, and 3, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. As in Alternative 2, additional actions would be taken to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. As in Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. Rehabilitation of historic traces would be expanded to include most town roads. These actions would protect structures and buildings that are ethnographic resources important to former residents and descendants of former residents who have long-standing ties and strong persistent associations with the town. They would also facilitate traditional access. Collectively the cultural resource management actions would result in a local long-term moderate beneficial impact on ethnographic resources.

As in Alternatives 1 and 2, natural resource management actions would include removal of invasive plants and new tree growth along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttall Mine portal near the headhouse. As in Alternative 3, trees would also be thinned in the Nuttallburg town site, the Seldom Seen site, the headhouse area, and along the conveyor length. Collectively these natural resource management actions would have a local long-term moderate beneficial impact on ethnographic resources.

The new footbridge across the New River would restore the traditional connection between the town of Nuttallburg and the town of Kaymoor. This would facilitate traditional access between the two communities resulting in a local long-term beneficial impact on ethnographic resources.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on ethnographic resources are identified in Section 4.1 above. The cumulative impacts of these actions on ethnographic resources are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term moderate adverse impacts on ethnographic resources. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on ethnographic resources. Alternative 4 would contribute an imperceptible beneficial increment to the total cumulative impact.

Section 106 Summary. The Section 106 determination of effect would be no adverse effect to ethnographic resources.

Conclusion. Cultural and natural resource management actions in Alternative 4 would have local long-term moderate beneficial impacts on ethnographic resources. The collective management actions in Alternative 4 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on ethnographic resources. There would be no impairment of ethnographic resources in the park.

■ **Comparison of Impacts of the Alternatives – Ethnographic Resources**

Cultural and natural resource management actions in Alternatives 1, 2, 3, and 4 would each result in a local long-term moderate beneficial impact on ethnographic resources. Each alternative would contribute an imperceptible beneficial increment to the total cumulative moderate adverse impact on ethnographic resources. None of the alternatives would result in an impairment of park resources or values related to ethnographic resources.

4.9 Local Roads and Park Access

■ **Applicable Regulations and Guidelines**

Regulations and guidelines related to local roads and park access include the following:

- Architectural Barriers Act of 1968
- Americans with Disabilities Act of 1990
- Secretary of the Interior's Regulation 43 CFR 17 – Enforcement on the Basis of Disability in the Interior Programs
- U.S. Access Board Draft Accessibility Guidelines for Outdoor Developed Areas of 1999
- NPS 2006 Management Policies

■ **Methodology and Assumptions**

Impacts to local roads and park access are evaluated in terms of anticipated changes to existing vehicle trips and parking patterns on local roads in the vicinity of the Nuttallburg Visitor Use Area. The analysis includes a qualitative assessment of the capacity of existing state roads in the project area to accommodate additional vehicle trips. The capacity of existing and proposed NPS parking facilities in the site vicinity is also qualitatively assessed.

Definitions of Impact Intensity Levels

- Negligible:** The impact of changes to visitor-generated traffic on public roads would not be readily apparent; roads would have adequate capacity to safely accommodate visitor traffic during all times of the year; adequate parking would be available to meet demand at all visitor facilities.
- Minor:** The impact of changes to visitor-generated traffic on public roads would be readily apparent; roads would have capacity to safely accommodate visitor traffic but congestion would slow travel somewhat and slightly detract from the visitor experience; adequate parking would not be available at to meet average daily demand sometimes causing visitors to park on local roads, potentially blocking through traffic.
- Moderate:** The impact of changes to visitor-generated traffic on public roads would be readily apparent; roads would have capacity to safely accommodate visitor traffic but congestion would slow travel and detract from the visitor experience during peak visitation periods; adequate parking would not be available to meet average daily demand sometimes causing visitors to park on local roads, potentially blocking through traffic.
- Major:** The impact of changes to visitor-generated traffic on public roads would be readily apparent; roads would not have adequate capacity to safely accommodate visitor traffic on an average day; adequate parking would not be available to meet average daily demand sometimes causing visitors to park on local roads, potentially blocking through traffic.

■ **Alternative 1 (Continuation of Existing Management) – Impacts on Local Roads and Park Access**

Analysis. In Alternative 1 existing traffic volumes and parking conditions would generally remain, although there could be some increase in visitation when compared to recent years due to recently completed trail improvements in the Nuttallburg area. Visitors would generally arrive by car. Visitor projections suggest that at a given time during an average summer day about six cars would park at the informal parking area on WV 85/5 approximately ¼ mile from the Nuttallburg headhouse trailhead and approximately ten cars would park informally along Keeney Creek Road. These cars would potentially block access for other vehicles and emergency vehicles. Visitor-related traffic and parking would result in a local long-term minor adverse impact on local roads and park access.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on local roads and park access are identified in Section 4.1 above. Growth and development in the three counties would generate additional traffic on roads providing access to the park, resulting in long-term minor to moderate adverse impacts on local roads and park access. Planned transportation system improvements would provide additional capacity to efficiently and safely accommodate much of the traffic generated by new development, resulting in long-term minor to moderate beneficial impacts on local roads and park access. These other actions have contributed or will contribute moderate adverse impacts on local roads and park access. The impacts of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on local roads and park access. Alternative 1 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. In Alternative 1 visitor-related traffic and parking would result in a local long-term minor adverse impact on local roads and park access. Alternative 1 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on local roads and park access.

■ **Alternative 2 (Preferred Alternative) – Impacts on Local Roads and Park Access**

Analysis. In Alternative 2 approximately 460 people are expected to visit the Nuttallburg Visitor Use Area per day on an average summer day. Visitors would generally arrive by car. Adequate parking capacity would be available at proposed parking facilities to meet demand. Cars would not be parked within the Keeney Creek Road right-of-way. Existing problems caused by visitors parking in the Keeney Creek Road right-of-way would be mitigated. Visitor-related traffic and parking would result in a local long-term minor beneficial impact on local roads and park access.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on local roads and park access are identified in Section 4.1 above. The cumulative impacts of these actions on local roads and park access are described above for Alternative 1. Collectively these other actions have contributed or will contribute moderate adverse impacts on local roads and park access. The impacts of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on local roads and park access. Alternative 2 would contribute an imperceptible beneficial increment to the total cumulative impact.

Conclusion. In Alternative 2 visitor-related traffic and parking would result in a local long-term minor beneficial impact on local roads and park access. Alternative 2 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on local roads and park access.

■ **Alternative 3 – Impacts on Local Roads and Park Access**

In Alternative 3 approximately 760 people are expected to visit the Nuttallburg Visitor Use Area per day on an average summer day. Visitors would generally arrive by car. Adequate parking capacity would not be available at proposed parking facilities to meet demand. Cars would be parked within the Keeney Creek Road right-of-way. Existing problems caused by visitors parking in the Keeney Creek Road right-of-way would not be mitigated. Visitor-related traffic and parking would result in a local long-term moderate adverse impact on local roads and park access.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on local roads and park access are identified in Section 4.1 above. The cumulative impacts of these actions on local roads and park access are described above for Alternative 1. Collectively these other actions have contributed or will contribute moderate adverse impacts on local roads and park access. The impacts of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on local roads and park access. Alternative 3 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. In Alternative 3 visitor-related traffic and parking would result in a local long-term moderate adverse impact on local roads and park access. Alternative 3 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on local roads and park access.

■ **Alternative 4 – Impacts on Local Roads and Park Access**

In Alternative 4 approximately 920 people are expected to visit the Nuttallburg Visitor Use Area per day on an average summer day. Visitors would generally arrive by car. Adequate parking capacity would not be available at proposed parking facilities to meet demand. Cars would be parked within the Keeney Creek Road right-of-way. Existing problems caused by visitors parking in the Keeney Creek Road right-of-way would not be mitigated. Visitor-related traffic and parking would result in a local long-term moderate adverse impact on local roads and park access.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on local roads and park access are identified in Section 4.1 above. The cumulative impacts of these actions on local roads and park access are described above for Alternative 1. Collectively these other actions have contributed or will contribute moderate adverse impacts on local roads and park access. The impacts of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term moderate adverse impact on local roads and park access. Alternative 4 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. In Alternative 4 visitor-related traffic and parking would result in a local long-term moderate adverse impact on local roads and park access. Alternative 4 would contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on local roads and park access.

■ **Comparison of Impacts of the Alternatives – Local Roads and Park Access**

Visitor-related traffic and parking in Alternative 1 would result in a local long-term minor adverse impact on local roads and park access. In Alternatives 3 and 4 visitor-related traffic and parking would result in a local long-term moderate adverse impact on local roads and park access. In Alternative 2 visitor-related traffic and parking would result in a local long-term minor beneficial impact on local roads and park access.

Alternatives 1, 3, and 4 would each contribute an imperceptible adverse increment to the overall cumulative long-term moderate adverse impact on local roads and park access. Alternative 2 would contribute an imperceptible beneficial increment to the overall cumulative long-term moderate adverse impact on local roads and park access.

4.10 Visitor Use and Visitor Experience

■ **Applicable Regulations and Guidelines**

Regulations and guidelines related to visitor use and visitor experience include the following:

- NPS Organic Act
- Architectural Barriers Act of 1968
- Americans with Disabilities Act of 1990
- NPS 2006 Management Policies

■ **Methodology and Assumptions**

The potential for change in visitor use and experience proposed by the alternatives was evaluated by identifying projected increases or decreases in visitor uses, and determining to what degree and for how long projected changes would affect the desired visitor experience.

Definitions of Impact Intensity Levels

Negligible: Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the impacts associated with the alternative.

Minor: Changes in visitor use and/or experience would be detectable and long-term, although the changes would be slight. The visitor would be aware of the impacts associated with the alternative, but the impacts would be slight.

Moderate: Changes in visitor use and/or experience would be readily apparent and long-term. The visitor would be aware of the impacts associated with the alternative and would likely be able to express an opinion about the changes.

Major: Changes in visitor use and/or experience would be readily apparent and long-term, severely adverse, or exceptionally beneficial, and have important long-term consequences. The visitor would be aware of the impacts associated with the alternative and would likely express a strong opinion about the changes.

■ **Alternative 1 (Continuation of Existing Management) – Impacts on Visitor Use and Visitor Experience**

Analysis. In Alternative 1, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse, as well as minor actions to protect foundations and other remains and artifacts at the town site. Natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. The town site would generally be kept open as would areas around mining complex buildings and along the conveyor. Collectively these cultural resource management actions and natural resource management actions would slightly enhance accessibility to historic areas of the site and make cultural resources slightly more visible to visitors. This would result in a local long-term negligible impact on visitor use and visitor experience.

While visitors would not be encouraged to visit the site, there could be some increase in visitation when compared to recent years due to recently completed trail improvements in the Nuttallburg area. Information about Nuttallburg would be limited to what is available in general park literature. No interpretive information would be provided. Signage would be limited to safety and informational signage along the four trails that provide visitor access to the site. Collectively these actions would result in a local long-term negligible impact on visitor use and visitor experience.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.1 above. These generally include growth and development on private property and transportation system improvements. New development and new roads in the park vicinity would detract from the visitor experience and visitor enjoyment of the park by altering the natural setting, increasing the number of people in the area, increasing traffic, increasing ambient noise, and generally reducing the wildness of the area. Collectively these other actions have contributed or will contribute long-term major beneficial impacts on visitor use and visitor experience. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on visitor use and visitor experience. Alternative 1 would contribute an imperceptible increment to the total cumulative impact.

Conclusion. Cultural resource management and natural resource management actions in Alternative 1 would result in a local long-term negligible impact on visitor use and visitor experience. Management actions taken to provide interpretive media and visitor facilities would have a local long-term negligible impact on visitor use and visitor experience. Alternative 1 would contribute an imperceptible beneficial increment to the overall cumulative long-term major beneficial impact on visitor use and visitor experience.

■ **Alternative 2 (Preferred Alternative) – Impacts on Visitor Use and Visitor Experience**

Analysis. As in Alternative 1, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. In addition actions would be taken to rehabilitate one or two coke ovens, to rehabilitate and maintain traces of major town roads as trails, and to rehabilitate foundation masonry for a limited number of structures associated with community life at

the town of Nuttallburg. As in Alternative 1, natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. Collectively these cultural resource management actions and natural resource management actions would significantly enhance accessibility to historic areas of the site and make cultural resources much more visible to visitors. This would result in a local long-term moderate beneficial impact on visitor use and visitor experience.

Visitors would be encouraged to visit the site and interpretive media would be provided. On an average summer day approximately 460 people are expected to visit the site. Four recreational trails would provide access to the mining complex and town site. Introductory waysides would be installed at trailheads. Overview interpretation of the mining complex would be provided at the headhouse and tipple. Wayside exhibits would be installed to help visitors understand the scope of the mining complex, with interpretive focal areas in the town of Nuttallburg and around the tipple and surrounding mining complex. Collectively these interpretive media and visitor facilities would have a local long-term major beneficial impact on visitor use and visitor experience.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.1 above. The cumulative impacts of these actions on visitor use and visitor experience are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term major beneficial impacts on visitor use and visitor experience. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on visitor use and visitor experience. Alternative 2 would contribute a perceptible beneficial increment to the total cumulative impact.

Conclusion. Cultural resource management and natural resource management actions in Alternative 2 would result in a local long-term moderate beneficial impact on visitor use and visitor experience. Management actions taken to provide interpretive media and visitor facilities would have a local long-term major beneficial impact on visitor use and visitor experience. Alternative 2 would contribute a perceptible beneficial increment to the overall cumulative long-term major beneficial impact on visitor use and visitor experience.

■ Alternative 3 – Impacts on Visitor Use and Visitor Experience

Analysis. As in Alternatives 1 and 2, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. As in Alternative 2, additional actions would be taken to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. In Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. Rehabilitation of historic traces would be expanded to include most town roads. As in Alternatives 1 and 2 natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. In Alternative 3, trees would also be thinned in the Nuttallburg town site, the Seldom Seen site, the headhouse area, and along the conveyor length to enhance interior views, top to bottom views, and rim to rim views. Collectively these cultural resource management actions and natural resource management actions would significantly enhance accessibility to historic areas of the site and make cultural resources much more visible to visitors. This would result in a local long-term moderate beneficial impact on visitor use and visitor experience.

Visitors would be encouraged to visit the site and interpretive media would be provided. On an average summer day approximately 760 people are expected to visit the site. As in Alternative 2, four recreational trails would provide access to the mining complex and town site. In addition a vertical connecting trail would be added from the headhouse to the tipple. As in Alternative 2 signage and interpretive media would be installed. In addition overview interpretation of the mining complex

would be added at the headhouse and tipple. Collectively these interpretive media and visitor facilities would have a local long-term major beneficial impact on visitor use and visitor experience.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.1 above. These other actions have contributed or will contribute long-term major beneficial impacts on visitor use and visitor experience. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on visitor use and visitor experience. Alternative 3 would contribute a perceptible beneficial increment to the total cumulative impact.

Conclusion. Cultural resource management and natural resource management actions in Alternative 3 would result in a local long-term moderate beneficial impact on visitor use and visitor experience. Management actions taken to provide interpretive media and visitor facilities would have a local long-term major beneficial impact on visitor use and visitor experience. Alternative 3 would contribute a perceptible beneficial increment to the overall cumulative long-term major beneficial impact on visitor use and visitor experience.

■ **Alternative 4 – Impacts on Visitor Use and Visitor Experience**

Analysis. As in Alternatives 1, 2, and 3, cultural resource management actions would include long-term stabilization of the tipple, conveyor, and headhouse. As in Alternative 2, additional actions would be taken to rehabilitate foundation masonry for a limited number of structures associated with community life at the town of Nuttallburg and to protect foundations and other remains and artifacts at the town site. As in Alternative 3 rehabilitation of the coke ovens would be expanded to include a bank of 10 coke ovens. Rehabilitation of historic traces would be expanded to include most town roads. As in Alternatives 1 and 2 natural resources would continue to be minimally managed except where vegetation growth has the potential to damage historic buildings and structures. As in Alternative 3, trees would also be thinned in the Nuttallburg town site, the Seldom Seen site, the headhouse area, and along the conveyor length to enhance interior views, top to bottom views, and rim to rim views. As in Alternative 3, the town site would generally be kept open as would areas around mining complex buildings and along the conveyor. Collectively these cultural resource management actions and natural resource management actions would significantly enhance accessibility to historic areas of the site and make cultural resources much more visible to visitors. This would result in a local long-term moderate beneficial impact on visitor use and visitor experience.

Visitors would be encouraged to visit the site and interpretive media would be provided. On an average summer day approximately 920 people are expected to visit the site. As in Alternative 2, four recreational trails would provide access to the mining complex and town site. As in Alternative 3 a vertical connecting trail would be added from the headhouse to the tipple. In addition a trail connection to the town of Kaymoor, including a footbridge across the New River, would be added. As in Alternative 2 signage and interpretive media would be installed. As in Alternative 3 an overview interpretation of the mining complex would be added at the headhouse and tipple. In addition interpretive media would be expanded to relate Nuttallburg and Kaymoor to one another, as well as to explain in more depth the relationship of industry to the natural phenomena of the gorge. Collectively these interpretive media and visitor facilities would have a local long-term major beneficial impact on visitor use and visitor experience.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on visitor use and visitor experience are identified in Section 4.1 above. The cumulative impacts of these actions on visitor use and visitor experience are described above for Alternative 1. Collectively these other actions have contributed or will contribute long-term major beneficial impacts on visitor use and visitor experience. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on

visitor use and visitor experience. Alternative 4 would contribute a perceptible beneficial increment to the total cumulative impact.

Conclusion. Cultural resource management and natural resource management actions in Alternative 4 would result in a local long-term moderate beneficial impact on visitor use and visitor experience. Management actions taken to provide interpretive media and visitor facilities would have a local long-term major beneficial impact on visitor use and visitor experience. Alternative 4 would contribute a perceptible beneficial increment to the overall cumulative long-term major beneficial impact on visitor use and visitor experience.

■ **Comparison of Impacts of the Alternatives – Visitor Use and Visitor Experience**

Cultural resource management and natural resource management actions in Alternative 1 would result in a local long-term negligible impact on visitor use and visitor experience, while similar actions in Alternatives 2, 3, and 4 would result in a local long-term moderate beneficial impact on visitor use and visitor experience. Management actions taken in Alternative 1 to provide interpretive media and visitor facilities would have a local long-term negligible impact on visitor use and visitor experience, while similar actions taken in Alternatives 2, 3 and 4 would have a local long-term major beneficial impact on visitor use and visitor experience.

Alternative 1 would contribute an imperceptible increment to the overall cumulative long-term major beneficial impact on visitor use and visitor experience. Alternatives 2, 3, and 4 would contribute a perceptible beneficial increment to the overall cumulative long-term major beneficial impact on visitor use and visitor experience.

4.11 Park Operations

■ **Applicable Regulations and Guidelines**

Regulations and guidelines related to park operations and park facilities include the following:

- NPS 2006 Management Policies

■ **Methodology and Assumptions**

Impacts of the alternatives on park operations relate to the actions required to manage the Nuttallburg Visitor Use Area facilities and resources in accordance with NPS mandates related to park staffing, maintenance, interpretation and visitor services, resource and visitor protection, and administration.

Definitions of Impact Intensity Levels

Negligible: Park operations and facilities would generally not be affected. The changes that occur would be so small that they would generally not be perceptible to most park staff and visitors.

Minor: A slight change in park operations and facilities would occur. The change would be slight and localized and would be perceptible to few staff and visitors.

Moderate: A substantial change in park operations and facilities would occur. The change would be noticeable to most staff and visitors.

Major: Numerous substantial changes in park operations and facilities would occur. The changes would be clearly noticeable to most staff and visitors as markedly different from existing operations.

■ Alternative 1 (Continuation of Existing Management) – Impacts on Park Operations

Analysis. In Alternative 1, following stabilization of the tipple, conveyor, and headhouse the park staff would monitor the structures to identify other potential risks of collapse that could jeopardize their integrity. As needed, park staff would take other minor actions to protect foundations and other remains and artifacts at the town site. Park staff would continue to minimally manage natural resources in the Nuttallburg area except where vegetation growth has the potential to damage historic buildings and structures. The town site would generally be kept open as would areas around mining complex buildings and along the conveyor. Invasive plants would be controlled through cutting, mowing, and selective application of Herbicides. New tree growth would be cleared or pruned along the conveyor and around the headhouse, tipple, coke ovens, other mining complex buildings, and the Nuttallburg Mine portal near the headhouse.

Park staff would continue to maintain existing trails/administrative roads to keep them open for hiking and administrative use, as appropriate. Maintenance would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way.

Overall in Alternative 1 the long-term operational needs for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term minor adverse impact on park operations.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on park operations are identified in Section 4.1 above. These other actions have contributed or will contribute major beneficial impacts on park operations. The impact of Alternative 1 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on visitor use and visitor experience. Alternative 1 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. The long-term operational needs associated with Alternative 1 for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term minor adverse impact on park operations. Alternative 1 would contribute an imperceptible adverse increment to the overall cumulative long-term major beneficial impact on park operations.

■ Alternative 2 (Preferred Alternative) – Impacts on Park Operations

Analysis. As in Alternative 1, following stabilization of the tipple, conveyor, and headhouse the park staff would monitor the structures to identify other potential risks of collapse that could jeopardize their integrity. As needed, park staff would take other minor actions to protect foundations and other remains and artifacts at the town site. In addition park operations would be expanded to include maintenance of one or two rehabilitated coke ovens and rehabilitated foundation masonry at structures associated with community life at the town of Nuttallburg.

As in Alternative 1, park staff would continue to minimally manage natural resources in the Nuttallburg area except where vegetation growth has the potential to damage historic buildings and structures.

As in Alternative 1, park staff would continue to maintain existing trails/administrative roads to keep them open for hiking and administrative use, as appropriate. In Alternative 2, the park staff would also maintain approximately 3,600 linear feet of new trails. Maintenance of trails and road traces would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. Interpretive media to be maintained would include approximately 16 waysides.

Park staff would also maintain four visitor parking facilities, including periodic grading, mowing of perimeter grass, and maintenance of three vault toilets.

Overall in Alternative 2 the long-term operational needs for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term minor adverse impact on park operations.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on park operations are identified in Section 4.1 above. These other actions have contributed or will contribute major beneficial impacts on park operations. The impact of Alternative 2 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on visitor use and visitor experience. Alternative 2 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. The long-term operational needs associated with Alternative 2 for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term minor adverse impact on park operations. Alternative 2 would contribute an imperceptible adverse increment to the overall cumulative long-term major beneficial impact on park operations.

■ Alternative 3 – Impacts on Park Operations

Analysis. As in Alternatives 1 and 2, following stabilization of the tipple, conveyor, and headhouse the park staff would monitor the structures to identify other potential risks of collapse that could jeopardize their integrity. As needed, park staff would take other minor actions to protect foundations and other remains and artifacts at the town site. As in Alternative 2, park operations would be expanded to include maintenance of rehabilitated masonry at structures associated with community life at the town of Nuttallburg. In Alternative 3 park operations would be further expanded to include maintenance of a bank of ten rehabilitated coke ovens.

As in Alternatives 1 and 2 park staff would continue to minimally manage natural resources in the Nuttallburg area except where vegetation growth has the potential to damage historic buildings and structures.

As in Alternatives 1 and 2 park staff would continue to maintain existing trails/administrative roads to keep them open for hiking and administrative use, as appropriate. In Alternative 3, the park staff would also maintain approximately 15,600 linear feet of new trails. Maintenance of trails and road traces would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. In addition, maintenance would be required to periodically thin vegetation along the conveyor length to provide views from top to bottom, in the headhouse area to enhance rim to rim views, and in the Nuttallburg town site and the Seldom Seen site to enhance interior views. Interpretive media to be maintained would include approximately 23 waysides and four interpretive venues.

Park staff would also maintain four visitor parking facilities, including periodic grading, mowing of perimeter grass, and maintenance of three vault toilets.

Overall in Alternative 3 the long-term operational needs for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term moderate adverse impact on park operations.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on park operations are identified in Section 4.1 above. These other actions have contributed or will contribute major beneficial impacts on park operations. The impact of Alternative 3 in conjunction with the impacts of these actions would result in a cumulative long-term major

beneficial impact on visitor use and visitor experience. Alternative 3 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. The long-term operational needs associated with Alternative 3 for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term moderate adverse impact on park operations. Alternative 3 would contribute an imperceptible adverse increment to the overall cumulative long-term major beneficial impact on park operations.

■ **Alternative 4 – Impacts on Park Operations**

Analysis. As in Alternatives 1, 2, and 3, following stabilization of the tipple, conveyor, and headhouse the park staff would monitor the structures to identify other potential risks of collapse that could jeopardize their integrity. As needed, park staff would take other minor actions to protect foundations and other remains and artifacts at the town site. As in Alternative 2, park operations would be expanded to include maintenance of rehabilitated foundation masonry at structures associated with community life at the town of Nuttallburg. As in Alternative 3 park operations would be further expanded to include maintenance of a bank of ten rehabilitated coke ovens.

As in Alternatives 2 and 3 park staff would continue to minimally manage natural resources in the Nuttallburg area except where vegetation growth has the potential to damage historic buildings and structures.

As in Alternatives 1, 2, and 3, park staff would continue to maintain existing trails/administrative roads with no improvements to keep them open for hiking and administrative use, as appropriate. In Alternative 4, the park staff would also maintain approximately 23,100 linear feet of new trails. Maintenance of road traces and trails would include periodic mowing, tree trimming, and removal of understory growth and invasive plants that encroach into trail and road rights-of-way. As in Alternative 3, maintenance would also be required to periodically thin vegetation along the conveyor length to provide views from top to bottom, in the headhouse area to enhance rim to rim views, and in the Nuttallburg town site and the Seldom Seen site to enhance interior views. As in Alternative 3, interpretive media to be maintained would include approximately 23 waysides and four interpretive venues.

Park staff would also maintain four visitor parking facilities, including periodic grading, mowing of perimeter grass, and maintenance of three vault toilets.

Overall in Alternative 4 the long-term operational needs for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term moderate adverse impact on park operations.

Cumulative Impacts. Other past, present, and reasonably foreseeable actions that have had or would have impacts on park operations are identified in Section 4.1 above. These other actions have contributed or will contribute major beneficial impacts on park operations. The impact of Alternative 4 in conjunction with the impacts of these actions would result in a cumulative long-term major beneficial impact on visitor use and visitor experience. Alternative 4 would contribute an imperceptible adverse increment to the total cumulative impact.

Conclusion. The long-term operational needs associated with Alternative 4 for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term moderate adverse impact on park operations. Alternative 4 would contribute an imperceptible adverse increment to the overall cumulative long-term major beneficial impact on park operations.

■ Comparison of Impacts of the Alternatives – Park Operations

The long-term operational needs associated with Alternatives 1 and 2 for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term minor adverse impact on park operations. In Alternatives 3 and 4 the long-term operational needs associated with Alternatives 3 and 4 for staff, maintenance, interpretation and visitor services, resource and visitor protection, and administration would result in a local long-term moderate adverse impact on park operations.

Alternatives 1, 2, 3, and 4 would contribute an imperceptible adverse increment to the overall cumulative long-term major beneficial impact on park operations.

5.0 CONSULTATION AND COORDINATION

5.1 Public Involvement

■ Stakeholder Meetings

Early in the planning process, the Planning Team identified numerous individuals and groups with specific interests in the future management of visitor use at the former sites of the Nuttall Mine and the Town of Nuttallburg. In the summer of 2006, these individuals were invited to participate in small group stakeholder meetings held at the New River Gorge National River Headquarters in Glen Jean, WV. Approximately 36 people attended the meetings, representing the following groups and interests:

- Plateau Action Network
- West Virginia Rivers Coalition
- Dunloup Creek Watershed Association
- West Virginia Trails Coalition
- New River Birding
- West Virginia Biking Association
- Blue Ridge Mountain Boy Scouts
- Various Commercial Climbing Interests
- American Whitewater
- West Virginia Wildwater Association
- Coastal Canoeists
- Various Private Paddler Interests
- Friends of the Rivers of West Virginia
- West Virginia Whitewater Commission
- Various Commercial Whitewater Interests

Subsequent to the stakeholder meetings in the summer of 2006, participants received routine announcements regarding continuing opportunities to provide input and comments.

■ Public Meetings

NPS hosted four public meetings for purposes of obtaining public input during the initial phase of the planning process. Each public meeting was held at the southern end of the park, in the middle of the park, and at the northern end of the park. Each set of public meetings was structured to accomplish the following:

- to provide the public with information regarding development of the plan
- to obtain the public's comments on findings of the planning process as they developed
- to obtain public input into subsequent steps of the planning process

Public Meeting 1 – January 24, 25, and 26, 2006. The first series of public meetings focused on providing the public with an overview of the planning process and obtaining input regarding the public's perception of the significance of the resources at the Nuttallburg site and what they valued most about the site. Small group discussions concentrated on gathering public comment. Approximately 185 people attended the meetings.

Public Meeting 2 – March 14, 15, and 16, 2006. The focus of the second series of public meetings was to identify the public's interests and concerns regarding management of the Nuttallburg Visitor Use Area and to obtain input regarding the public's vision for the future of the site. Small group discussions concentrated on gathering public comment. Approximately 75 people attended the meetings.

Public Meeting 3 – May 9, 10, and 11, 2006. The third set of public meetings shared with the public the findings of the planning team's analysis of the resources at the Nuttallburg Visitor Use Area. The public was invited to review analysis maps of the site and to talk further with the park's resource

specialists. The public was asked to provide comments on the resource analysis in writing using post-it notes. Approximately 41 people attended the meetings.

Public Meeting 4 – July 25, 26, and 27, 2006. At the fourth set of public meetings NPS presented four alternatives for the future management of the Nuttallburg Visitor Use Area to the public for their consideration and comment. The public was invited to review maps of the alternatives and to talk with the park's resource specialists. The public was asked to provide comments on the alternatives in writing using post-it notes. Approximately 78 people attended the meetings.

■ **Press Releases and Public Meeting Announcements**

Press releases announcing the planning project and describing the project's progress were issued prior to the four series of public meetings on January 11, 2006, March 3, 2006, May 3, 2006, and July 20, 2006. Each press release was faxed and emailed to eight television/radio stations and to local newspapers in Beckley, Fayetteville, Charleston, Summersville, Hinton, and Bluefield. Public meeting announcements were placed in the *Fayette Tribune*, the *Register-Herald* (Beckley), and the *Hinton News*. Public meeting invitations were sent to all parties on the park's mailing list. The invitations identified the time and place for each meeting and provided general information on the meeting content, meeting format, and the type of input desired from the public.

■ **Newsletters**

Two weeks in advance of the first series of public meetings (January 2006) and the third series of public meetings (May 2006) the NPS distributed a newsletter to all parties on the park's mailing list. Newsletter 1 invited the public to attend the upcoming public meetings and provided a brief introduction to the Nuttallburg Visitor Use Area Implementation Plan project. Newsletter 2 invited the public to attend the upcoming public meetings and provided a summary of the issues and concerns identified by the public at the second series of public meetings.

■ **NPS Planning, Environment and Public Comment Website**

The NPS Planning, Environment and Public Comment (PEPC) web site has provided the public with an electronic link for obtaining information about or commenting upon the planning process. Meeting invitations, newsletters, comment forms, and public meeting slide shows were posted for the public to view and/or download. One person provided comments through the web site.

5.2 **Public Agencies Consulted during the Planning Process**

■ **Agencies in Attendance at Public Meetings**

The NPS invited several federal and state agency representatives to attend each of the four series public meetings. Following is a list of those to whom invitations were sent, with an indication of which meetings were attended:

- **Federal Agencies**

- U.S. Geological Survey (attended Public Meetings 1 and 2)
- U.S. Department of Agriculture, Natural Resources Conservation Service
- U.S. Environmental Protection Agency, Region 3
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service, Office of Surface Mining
- U.S. Department of the Interior, Office of Planning and Review
- Virginia Division of Natural Resources

Advisory Council on Historic Preservation

- **State Agencies**

West Virginia Division of Natural Resources

W.V. DOT, Division of Highways

W.V. DOT, Coal Heritage Highway Authority (attended Public Meetings 1 and 4)

W.V. Division of Culture and History

W.V. DNR (attended Public Meetings 1 and 2)

W.V. DNR, Non-Game and Natural Heritage Programs

W.V. DNR, Fisheries Resources Section (attended Public Meeting 1)

W.V. DNR, Wildlife Resources Section (attended Public Meetings 1 and 2)

W.V. DNR, Law Enforcement Section

W.V. Division of Tourism

W.V. Department of Commerce

W.V. Governor's Office

W.V. Development Office

W.V. DEP, Division of Air Quality

W.V. DEP, Division of Water and Waste Management

W.V. DEP, Division of Land Restoration

W.V. DEP, Office of Innovation

W.V. DEP, Division of Mining and Reclamation

W.V. Citizens Conservation Corps

W.V. Division of Forestry

Babcock State Park

Hawks Nest State Park

Pipestem Resort State Park

Bluestone State Park

New River Parkway Authority (attended Public Meetings 1, 2 and 4)

■ **Section 106 Consultation**

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, requires that federal agencies consider the effect of undertakings on properties listed on the National Register of Historic Places and allow the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) the opportunity to comment.

On April 5, 2007, New River Gorge National River sent a letter to the West Virginia Department of Culture and History to initiate consultation for the Nuttallburg Visitor Use Area. On April 11, 2007 the Deputy State Historic Preservation Officer sent a response to the NPS indicating that the department would provide further review of the project when the draft environmental assessment is complete.

■ **Section 7 Consultation**

Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq) requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. NPS management policies also require cooperation with appropriate state

conservation agencies to protect state-listed and candidate species of special concern within park boundaries.

The NPS has identified the potential for occurrences of rare, threatened, or endangered species in the Nuttallburg Visitor Use Area vicinity through review of existing data, coordination with the West Virginia Division of Natural Resources (WV DNR), and field surveys by NPS staff and other experts. Consultation with the WV DNR provided a list of designated species that potentially occur within the park (see Appendix A). Field study confirmed occurrences of several designated species in the area including three species of bats and the Allegheny woodrat (*Neotoma magister*).

On November 6, 2006, the NPS notified the West Virginia Field Office of the U.S. Fish and Wildlife Service (U.S. FWS) that it is proposing to implement cultural and natural resource management actions at the Nuttallburg Mining Complex and town of Nuttallburg site and to develop visitor use facilities that would make the site more accessible to park visitors.

Section 7 Consultation will proceed once a copy of the implementation plan/environmental assessment has been reviewed by the U.S. FWS West Virginia Field Office. Based upon the analysis performed for this EA the effect of Alternative 2 (Preferred Alternative) on special status species are expected to be discountable and insignificant.

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LEGAL CITATIONS

Laws and executive orders that apply to the management of New River Gorge National River are listed below.

New River Gorge National River Establishing Legislation

- Water Resources Development Act of 1986, P.L. 99-662 (H.R. 6); November 17, 1986
- West Virginia National Interest River Conservation Act, P.L. 100-534 (H.R. 900); October 26, 1988
- West Virginia National River Amendments of 1996

National Park Service Enabling Legislation

- Act of August 25, 1916 (National Park Service Organic Act), Public Law (P.L.) 64-235, 16 United States Code (U.S.C) Section (§) (*et seq* (and the following ones)) as amended
- Reorganization Act of March 3, 1933, 47 Statute (Stat.) 1517
- General Authorities Act, October 7, 1976, P.L. 94-458, 90 Stat. 1939, 16 U.S.C. §1a-1 *et seq*.
- Act amending the Act of October 2, 1968 (commonly called Redwoods Act), March 27, 1978, P.L. 95-250, 92 Stat. 163, 16 U.S.C. Subsection(s) (§§) 1a-1, 79a-q
- National Parks and Recreation Act, November 10, 1978, P.L. 95-265, 92 Stat. 3467; 16 U.S.C. §1 *et seq*.

Accessibility Citations

- Americans with Disabilities Act, P.L. 101-336, 104 Stat. 327, 42 U.S.C. §12101

- Architectural Barriers Act of 1968, P.L. 90-480, 82 Stat. 718, 42 U.S.C. §4151 *et seq.*
- Rehabilitation Act of 1973, P.L. 93-112, 87 Stat. 357, 29 U.S.C. §701 *et seq.* as amended by the Rehabilitation Act Amendments of 1974, 88 Stat. 1617

Cultural Resources Citations

- American Indian Religious Freedom Act, P.L. 95-341, 92 Stat. 469, 42 U.S.C. §1996
- Antiquities Act of 1906, P.L. 59-209, 34 Stat. 225, 16 U.S.C. §432 and 43 Code of Federal Regulations (CFR) 3
- Archeological and Historic Preservation Act of 1974, P.L. 93-291, 88 Stat. 174, 16 U.S.C. §469
- Archeological Resources Protection Act of 1979, P.L. 96-95, 93 Stat. 712, 16 U.S.C. §470aa *et seq.* and 43 CFR 7, subparts A and B, 36 CFR 79
- National Historic Preservation Act as amended, P.L. 89-665, 80 Stat. 915, 16 U.S.C. §470 *et seq.* and 36 CFR 18, 60, 61, 63, 68, 79, 800
- Native American Graves Protection and Repatriation Act of 1990, 25 U.S.C. 3001 *et seq.* and 43 CFR 10
- Protection of Historic and Cultural Properties, Executive Order (E.O.) 11593; 36 CFR 60, 61, 63, 800; 44 Federal Register (FR) 6068
- Public Buildings Cooperative Use Act of 1976, P.L. 94-541, 90 Stat. 2505, 42 U.S.C. §4151-4156

Natural Resources Citations

- Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act, Environmental Statement Memorandum (E.S.) 80-3, 08/11/80, 45 FR 59109
- Clean Air Act as amended, P.L. Chapter 360, 69 Stat. 322, 42 U.S.C. §7401 *et seq.*
- Endangered Species Act of 1973, as amended, P.L. 93-205, 87 Stat. 884, 16 U.S.C. §1531 *et seq.*
- Executive Order 11514 – Protection and Enhancement of Environmental Quality
- Executive Order 11988 – Floodplain Management, 42 FR 26951, 3 CFR 121 (Supplement (Supp) 177)
- Executive Order 11990 – Protection of Wetlands, 42 FR 26961, 3 CFR 121 (Supp 177)
- Executive Order 12088 – Federal Compliance with Pollution Control Standards
- Executive Order 13112 – Invasive Species, 64 FR 6183
- Federal Insecticide, Fungicide and Rodenticide Act, P.L. 92-516, 86 Stat. 973, 7 U.S.C. §136 *et seq.*
- Federal Water Pollution Control Act (commonly referred to as Clean Water Act), P.L. 92-500, 33 U.S.C. §1251 *et seq.* as amended by the Clean Water Act, P.L. 95-217
- Fish and Wildlife Coordination Act of 1958 as amended, P.L. 85-624, 72 Stat. 563, 16 U.S.C. §661, *et seq.*

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- Mangnuson Fishery Conservation and Management Act of 1976, P.L. 94-625, 90 Stat. 331m 16 U.S.C. §1801 *et seq.*
- Migratory Bird Conservation Act, P.L. Chapter 257, 45 Stat. 1222, 16 U.S.C. §715 *et seq.*
- Migratory Bird Treaty Act of 1918, P.L. 186, 40 Stat 755
- National Environmental Policy Act of 1969, P.L. 91-190, 83 Stat. 852, 42 U.S.C. §4321 *et seq.*
- National Historic Preservation Act, as amended, P.L 89-665, 80 Stat. 915, 16 U.S.C. §470 *et seq.* and 36 CFR 18, 60, 61, 61, 68, 79, 800
- National Park System Final Procedures for Implementing E.O. 11988 and 11990 (45 FR 35916 as revised by 47 FR 36718)
- Protection and Enhancement of Environmental Quality, E.O. 11514 as amended, 1970, E.O. 11991, 35 FR 4247; 1977, 42 FR 26967)
- Resource Conservation and Recovery Act, P.L. 94-580, 30 Stat. 1148, 42 U.S.C. §6901 *et seq.*
- Rivers and Harbors Act of 1899, 33 U.S.C. Chapter 425, as amended by P.L. 97-332, October 15, 1982 and P.L. 97-449, 33, U.S.C. §§401-403
- Water Resources Planning Act of 1965 (P.L. 89-90, 42 U.S.C. §1962 *et seq.*) and Water Resource Council's Principles and Standards, 44 FR 723977
- Watershed Protection and Flood Prevention Act, P.L. 92-419, 68 Stat. 666, 16 U.S.C. §100186
- Wild and Scenic Rivers Act, P.L. 90-542, as amended, 16 U.S.C. 1271-1287
- Wilderness Act of 1964, 16 U.S.C. 1131-1136, 78 Stat. 890

Other Citations

- Administrative Procedures Act, 5 U.S.C. §551-559, §§701-706
- Comprehensive Environmental Response, Compensation and Liability Act of 1980, P.L. 96-51042 U.S.C. 9601 – 9675
- Concessions Policy Act of 1965, P.L. 89-249, 79 Stat. 969, 16 U.S.C. §20 *et seq.*
- Department of Transportation Act of 1966, P.L. 89-670, 80 Stat. 931, 49 U.S.C. §303
- Executive Order 12003: Energy Policy and Conservation, 3 CFR 134 (Supp. 1977), 42 U.S.C. §2601
- Executive Order 12008: Federal Compliance with Pollution Control Standards
- Executive Order 12372: Intergovernmental Review of Federal Programs, 47 FR 30959
- Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Executive Order 13007: Indian Sacred Sites (61 FR 26771-26772 (1996))
- Executive Order 6166: Organization of Executive Agencies (Amended by E.O. 6226, 6586, 6623, 6639, 6728, 12608)
- Forest and Rangeland Renewable Resources Planning Act, P.L. 95-307, 92 Stat. 353, 16 U.S.C. §1600 *et seq.*

APPENDIX A

Compliance Coordination

- Letter Received from the W.V. Division of Natural Resources A-1
- Letter Received from the W.V. Division of Culture and History..... A-3



DIVISION OF NATURAL RESOURCES

Wildlife Resources Section

Operations Center

P.O. Box 67

Elkins, West Virginia 26241-3235

Telephone (304) 637-0245

Fax (304) 637-0250

February 28, 2006

Joe Manchin III
Governor

Frank Jezioro
Director

Mr. Calvin F. Hite
National Park Service
New River Gorge National River
P.O. Box 246
Glen Jean, WV 25846

Dear Mr. Hite:

Thank you for contacting us regarding rare, threatened and endangered (RTE) species and critical habitats within the New River Gorge National River. Enclosed is disk containing a spreadsheet listing the RTE species and communities currently known from within the National River. The list includes the species or community names, rarity ranks, federal status, date of last observation, survey site and coordinates in NAD 83/Zone 17.

We hope that these species are taken into consideration when planning future projects for the National River. Please let us know if you require any additional information as work on the Management Plan progresses.

Sincerely,

A handwritten signature in dark ink, appearing to read "Barbara Sargent".

Barbara Sargent
Environmental Resources Specialist
Natural Heritage Program

enclosure



WEST VIRGINIA
DIVISION OF
CULTURE & HISTORY

1900 Kanawha Blvd., E.
Charleston, WV
25305-0300

Phone 304.558.0220
Fax 304.558.2779
TDD 304.558.3562
www.wvculture.org
EEO/AA Employer

Mr. Calvin Hite, Superintendent
New River Gorge National River
104 Main Street
PO Box 246
Glen Jean, WV 25846

Re: Nuttallburg Mining Complex and Town, Fayette County
National Register of Historic Places

Dear Mr. Hite:

We have reviewed the National Register of Historic Places nomination for the Nuttallburg Coal Mining Complex and Town. In our opinion, the complex is eligible for listing in the National Register under the following criteria, areas of significance, and levels of significance:

NR Criteria	Area of Significance	Level of Significance
Criterion A	Business (Fordson Coal Co. vertical integration)	National
Criterion B	Industry (John Nuttall)	Local
Criterion C	Engineering (coal mining complex)	National
Criterion D	Archaeology (town site)	Local

Due to the identification of several areas of significance, we have clarified the relative levels of significance for each area of significance. We agree that the important business and engineering elements of the property's history were important to the nation as a whole, thus meriting recognition at the national level of significance. Our determination is rendered for the purposes of processing the nomination at the state level. It does not carry the weight of an official determination of eligibility by the Keeper of the National Register.

Sincerely,

Alan Rowe
National Register Coordinator

cc: Ms. Betsy Iglehear
Mr. Richard Segars

PREPARERS

■ NPS Planning Team

New River Gorge National River

Don Striker, Superintendent

Calvin Hite, Superintendent (former)

Deborah Darden, Deputy Superintendent

Mike Hunter, Deputy Superintendent for Operations (former)

Clif Bobinski, Park Planner

Gene Clare, Geologist

Paul Fox, Automotive Worker

Gary Hartley, Chief Ranger

Duncan Hollar, Assistant Chief Ranger (former)

Dave Fuerst, Cultural Resource Specialist

Michael Hartzog, South District Maintenance Foreman

Adrienne Jenkins, Park Ranger, Interpretation

Sheryle Lindley, Facility Manager

Lynn Loetterle, Sandstone District Interpreter (former)

Peggy Maddy, Contract Specialist (former)

Greg Malcolm, Canyon District Law Enforcement Ranger

James Minor, Assistant Facility Manager

Jennifer Noll, South District Law Enforcement Ranger

John Perez, Biologist

Robin Perry, Superintendent's Secretary

Sonny Perry, North District Maintenance Foreman

Greg Phillips, IT Specialist

Jesse Purvis, Fisheries Biologist

Richard Segars, Historical Architect

Lorrie Sprague, Public Affairs Specialist

Andrew Steel, GIS Specialist

Ken Stephens, Supervisory Natural Resource Specialist (former)

Rob Turan, South District Ranger (former)

Candace Tinkler, Chief of Interpretation

Matthew Varner, Wildlife Biologist (former)

Lila Walker, Administrative Officer (former)

Lizzie Watts, North District Interpreter (former)

Donnie Wilson, Realty Specialist

Northeast Regional Office

Brian Campbell, Cultural Anthropologist

Kathy Dilonardo, Chief, Interpretation (former)

Elizabeth Igleheart, National Register Coordinator

Jacki Katzmire, Environmental Protection Specialist

Terrence Moore, Chief, Park Planning and Special Studies

Cheryl Sams O'Neil, Resource Planning Specialist

Chuck Smythe, Ethnographer

■ **Contractor Planning Team**

Wallace Roberts & Todd, LLC

Elizabeth Clarke, AICP, Principal and Project Manager

Eric Tamulonis, ASLA, Landscape Architect

Loren Shaw, Landscape Designer

Andrea Mazzocco, Graphic Designer

ICON architecture, inc.

Jonathan S. Lane, AIA, AICP, Principal

Ahmed Kaddoum, Planner

Kevin Losso, GIS Specialist

Bora Mici, Planner

Richard Perkins, Graphic Designer

Kevin Tofias, Researcher

ACRONYMS

AML – abandoned mine lands
 BMPs – best management practices
 CEQ – Council on Environmental Quality
 CFR – Code of Federal Regulations
 CLI – Cultural Landscape Inventory
 CLR – Cultural Landscape Report
 DO – Director’s Order
 EA – Environmental Assessment
 EO – Executive Order
 EPA – Environmental Protection Agency
 FEMA – Federal Emergency Management Agency
 FICR – Federal Impact Conversion Rating (pursuant to the Farmland Protection Policy Act)
 GMP – General Management Plan
 IHTIA – West Virginia University, Institute for the History of Technology and Industrial Archaeology
 IP – Implementation Plan
 NEPA – National Environmental Policy Act
 NHPA – National Historic Preservation Act
 NPDES – National Pollutant Discharge Elimination System
 NPS – National Park Service
 NR – National River
 NRCS – U.S. Department of Agriculture Natural Resources and Conservation Service
 NWI – U.S. Fish and Wildlife Service National Wetland Inventory
 PL – Public Law
 ppm – parts per million
 ROW – right-of-way
 RL – river left (looking downstream)
 RR – river right (looking downstream)
 SHPO – State Historic Preservation Officer
 SR – West Virginia state road
 SWPPP – Stormwater Pollution Prevention Plan
 USC – U.S. Code
 WV DEP – West Virginia Division of Environmental Protection
 WV DNR – West Virginia Division of Natural Resources
 WV DT – West Virginia Division of Tourism
 WV GES – West Virginia Geologic and Economic Survey
 WV SHPO – West Virginia State Historic Preservation Officer
 WVU – West Virginia University
 US ACOE – U.S. Army Corps of Engineers

ACRONYMS

US 19 – U.S. Route 19

US DC – U.S. Department of Commerce, Bureau of the Census

US FWS – U.S. Fish and Wildlife Service

USGS – U.S. Geological Survey



As the nation's primary conservation agency, the Department of the Interior has responsibility for most of our nationally owned public land and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration

