CHAPTER THREE

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Introduction

Based on comments received on the earlier official draft plan/EIS circulated for public comment in February 2000, additional information was developed on alternatives. One new alternative was developed that responded to the desire of many for additional detail. The additional alternative was labeled "D," following the previous alternatives "A," "B," and No-Action (or "C") described in the February 2000 draft. In January 2003, NPS released Alternative D and the earlier three alternatives for public review and comment. As revised herein, Alternative D is the NPS' Preferred Alternative.

The information discussed in the previous chapter under "Required Management" outlined the laws and other requirements imposed on National Area management. These requirements, such as the various distinctions between the gorge and the plateau (or "adjacent area"), underlie all of the alternatives, including Alternative D.

This section on alternatives includes a full discussion of Alternative D, plus references to the other alternatives as needed. Discussion of the other alternatives can be found in the February 2000 draft. That document is included here by reference. Chapter 3 of that document on alternatives is reproduced in the appendix for ready reference. Additional details of the no-action alternative, or current conditions, are presented along with Alternative D.

Alternative D Concept

In contrast to the other action alternatives, which are broad applications of three types of management units, or zones, Alternative D includes additional information that permits a greater understanding of management objectives in different parts of the National Area. More types of zones are used to highlight different kinds of resources, development, and use.

In addition to more zone types, specific roads and trails are identified for public use. The roads and trails included in alternative "D" would constitute the official road and trail system for the National Area.

It is important to note that while increased staffing and funding are called for under Alternative D, it would remain for the National Area to balance the rate of plan implementation with increases in staffing and funding. Projects described in Alternative D would only be implemented to the extent that funding and staffing allowed.

Following the discussion on zones (management units) will be a discussion of land ownership, resource management, visitor education, and development, including roads and trails. Maps and text are used to help in understanding all the elements of the alternative.

Alternative D Zones

The following zone types would be applied at suitable locations within the National Area. All of the National Area is covered in one zone type or another because all lands and waters would be managed according to certain identified objectives. Each zone type has a "management prescription" outlining desired conditions and what it would take to achieve and maintain those conditions. The management prescriptions are National Area policy for the areas included in the various zones.

The application of the different zone types within the National Area is shown in the series of seven maps following the detailed zone discussion.

Some land within the National Area remains in private ownership. Including these areas in certain zones does not indicate any manner of NPS management of these lands while they are still in private ownership. The intent is only to show how such lands would be managed in the future if and when acquired and how they would fit in with plans for the surrounding NPS lands.

IMPORTANT NOTE: Only the few roads selected for inclusion in the two types of transportation zones are shown on the following series of zone maps. The vast majority of roads – and all trails – are only referenced and shown in the later discussion and series of maps covering individual roads and trails.

NATURAL ENVIRONMENT RECREATION ZONE

Application:

This unit is applied to natural landscape areas suitable for and capable of sustaining dispersed recreation. It includes a variety of environments from ridges to valleys. It is typically forested. This unit type covers most of the National Area.

Desired resource conditions and setting:

Natural processes would be protected within this unit, and a predominantly natural condition would be readily apparent to the visitor. Natural succession into mature forest would generally be the resource objective, although some areas may be managed to promote certain vegetation types, such as native grasses. Resource manipulation by official personnel for the low level of development in this unit would be accepted with prior planning and compliance.

Desired visitor experience:

Away from points of congregation, such as trailheads, visitors would be in a natural setting free from most modern facilities and conveniences. Most visitors would sense that they are in an "undeveloped" area and have left behind the familiar. Solitude and natural quiet would generally be available in this unit in all but peak use times. There would be a broad range of challenge, physical exertion, and outdoor skill involved depending on one's activity and selected location. A moderate to high time commitment would be typical.

Kinds/levels of management:

A variety of resource management projects and studies would be continuous as National Area personnel strive to increase their knowledge of the area's resources and their use. Thus, a sustained, moderate level of management effort is anticipated in working towards this unit's desired conditions. Addressing resource degradation would be a priority, especially in the gorge area. Fire management would contribute to the desired resource conditions and setting. Visitor safety awareness, information, and orientation would be critical because of the remoteness of much of the unit and there would be little interaction with National Area personnel. Similarly, trail maintenance would be important for visitor safety as well as for visitor enjoyment and resource protection. Monitoring of trail conditions and use would occur. Management of trail use may be appropriate at some point to protect resources and the visitor experience if other means of maintaining objectives are ineffective or impractical. For instance, if trail use exceeds the ability of a trail at its desired standard to sustain that use, then use on that trail may be redirected, restricted, or otherwise managed to maintain objectives. Also, it is conceivable, although not probable, during the life of this plan that trail use may increase to the point where visitors become generally dissatisfied with the amount of trail use encountered during popular times of use, e.g., spring break, summer, fall color. Management of use may become desirable to ensure appropriate visitor goals can be met somewhere in the National Area. (Resource indicators: evidence of trail travel outside of the constructed travelway; existence of unofficial trails; loss of trail tread; increased erosion on trails and at stream crossings; increased size or erosion/compaction at backcountry camping areas. Resource standards: no evidence of permanent widening of the travelway; no increase in unofficial trails; no significant trail erosion; no environmental degradation at backcountry campsites. Social indicators: visitor comments, either volunteered or by survey, expressing dissatisfaction concerning perceived overuse of trails; number of visitor groups registering for backcountry permits on trails frequented by hikers or equestrians on overnight outings during peak months. Social standards: substantial dissatisfaction expressed voluntarily or by more than 10% of users surveyed; no visible overuse of backcountry campsites.)

Kinds/levels of visitor use:

Trail uses would predominate. Camping by backpack or packhorse would be available. Hunting would occur in season outside of safety zones. Use levels would be higher near development sites and trailheads. Once away from points of congregation, use levels would naturally be lower and even more so in remote areas.

Kinds/levels of development:

A variety of trail types would be available to support different uses and visitor experience objectives. Trail structures would harmonize with the natural scene while being of appropriate design to protect resources. Camping areas may be designated, would be located to minimize resource impacts, and would be small and unimproved, although they may include fire rings and hitching rails. Administrative use structures needed for maintenance or resource management may be provided with administrative approval and would be sensitively located with regard to resource protection and designed to harmonize with the setting. With mineral development allowed by legislation, facilities required for oil and gas operations would continue to exist. These operations are coordinated between the operators and NPS. Their presence in some areas could affect resource and visitor experience objectives. Operations planning is subject to NPS' environmental compliance process.

SENSITIVE RESOURCE PROTECTION ZONE

General application:

This zone designates natural and cultural areas and features particularly vulnerable or sensitive to damage or deterioration by natural causes or human disturbance. This zone also includes sensitive resources that have been previously impacted and where remedial actions may be appropriate. Specific resource types that are included within this unit are discussed separately following this general prescriptive statement. These prescriptions overlap where the resources are co-located. For instance, cliff edges, rock shelters, and threatened or endangered species are discussed separately; however, such species may be found at these sites. In a location where more than one sensitive resource zone occurs, multiple management prescriptions apply, with the most restrictive given priority. Smaller size features distributed throughout the National Area may not be indicated on the maps but still are considered in this zone and the resource-specific management prescriptions apply. Any resources that are subsequently designated as sensitive during the life of this plan (e.g., newly-discovered endangered species, archeological resources) would be considered a part of this zone and would be subject to the applicable resource-specific management prescriptions.

Desired resource conditions and setting:

Resources in this zone would reflect natural processes and would be carefully protected from unnatural degradation. Cultural resources would reflect specific management objectives on desired treatments. Tolerance for degradation due to human interaction is extremely low.

Desired visitor experience:

Visitor access may or may not be provided, and if so, it is under controlled conditions. It is desirable that visitors learn about these resources and the need to protect them. This educational effort would normally be provided prior to possible contact with the resources, such as in the visitor contact stations, in available literature, and at trailheads. If access is provided, it may only allow visitors to view the resource, either close up or from afar, depending on the resource.

Kinds/levels of management:

Management of the resources and any visitor use within the unit would be intensive. Specific resource management projects would likely be targeted at these resources. Monitoring of resource conditions would occur. Fire management objectives would address and be consistent with the various resource protection objectives. Educating visitors of resource values would be high priority, although mainly off-site. Any visitor facilities provided in these units would have a high priority for maintenance in order to protect resources. Resource and social indicators and standards are identified for each sensitive resource type included.

Kinds/levels of visitor use:

Depending on the resource, its location, and the appropriateness of making it available to visitors, visitor use could range from high to none. Use may only be viewing the resource from a distance, either near or far. It could also be walking through a sensitive area on a clearly marked trail or a boardwalk marked with appropriate guidance. Horseback riding may be allowable in certain instances. River use may involve wading and swimming in certain areas, fishing, and the use of human-powered watercraft. Primitive camping may occur along rivers in carefully selected locations. Visitor use may be limited if resource conditions warrant special treatment.

Kinds/levels of development:

If visitor use is determined appropriate, sufficient facilities would be provided to protect the resources. These facilities could include dirt or hardened trails, boardwalks, bridges, ladders, platforms, railings, signs, and hitching rails. In the case of river corridors, small parking sites for river ingress/egress may be provided consistent with legislative restrictions in the gorge. In cases of new facility construction, appropriate planning and compliance documentation would be completed. As in the Natural Environment Recreation Zone, oil and gas development could occur in areas zoned for Sensitive Resource Protection. This would only be the case where mineral rights are owned by others. Operational planning for oil and gas development would provide for review by NPS, including environmental compliance. Protection of resources, while permitting the responsible exercise of legal rights, is the objective.

- *Cliff edges*

Application:

Cliff edges are defined here as the exposed, rocky, sparsely vegetated, sandstone outcrops along the rim of the gorge. They can be found along the main gorge of the Big South Fork and up the valleys of many tributaries. They can run for a mile or more or occur in isolated short lengths. Cliff edges are a recognizable physiographic feature and are not necessarily the same as the “gorge” outline as defined in the legislation.

Desired resource conditions and setting:

These areas are home to sensitive plant species, provide roosting and nesting sites for birds, and may be significant archeological sites. They would be managed as natural habitats with only minimal and necessary human interaction.

Desired visitor experience:

Cliff edges and their associated cliff faces (see following) represent a prime scenic resource of the National Area. Visitors would be allowed access to these areas in a few, carefully selected places for viewing purposes at natural or developed overlooks.
Kinds/levels of management:

Only pedestrian access would be provided. Management would include provision of trails, walkways, platforms, railings, signs and other facilities needed to provide personal safety and minimize resource impacts. However, not all access points, or overlooks, would be developed, i.e., those in more remote areas may only be natural, with only trail access. Trail access would generally be perpendicular to the cliff edge in order to minimize disturbance. Any parking and hitching rails would be provided outside this zone. Use would be monitored to ensure it remains safe and minimally impacting. (Resource Indicator: visible or otherwise detectable damage to rock, soils, and vegetation. Resource Standard: no appreciable change from natural condition. Social Indicator: visitors outside of safe area, e.g., railings, platform. Social Standard: no visitors outside of safe area.) While access would not be provided to particularly sensitive cliff edges, access to others may be restricted or removed if other means to maintain standards are not effective.

Kinds/levels of visitor use:

All use in this zone would be on foot, whether approached by vehicle or horse trail. Common activities would include viewing, photography, bird watching, and hearing natural sounds. Use at easily accessible, developed overlooks is expected to be high, particularly at times such as fall color season. Remote overlooks are expected to remain relatively low in use. Generally, use would be limited to acceptable levels by associated means of access such as parking but may be administratively limited when necessary to achieve desired resource and visitor experience objectives. No camping would be allowed.

Kinds/levels of development: In the cliff edge zone itself there would only be the minimum facilities provided to ensure visitor safety. At easily accessible locations, facilities could include hardened trails, platforms, railings, and signs. Remote locations may only have a single, natural surfaced approach trail. Any associated development such as parking would be located in a different zone.

- *Cliff faces*

Application:

These are defined as those portions of the gorge walls that are sheer, exposed rock.

Desired resource conditions and setting:

Natural conditions, processes and appearance would characterize these areas.

Desired visitor experience:

These areas are visually important to all visitors. The contrast of sheer rock walls with forested slopes and the river is highly attractive. Most visitors would observe these areas from afar, either from overlooks, trails, or the river. Others would be allowed to climb these areas in locations that have been determined suitable by specific planning.

Kinds/levels of management:

Protecting natural processes and maintaining a natural appearance would be the primary management objectives. Management focus would be on direct visitor use of these areas, mostly climbing. Identifying suitable areas, specific routes, techniques, access, and use levels would be the subject of specific planning. Areas made available for climbing would be sites where sensitive resources are not abundant or are not a significant issue and then only where routes can readily avoid adverse impacts. They would also be sites accessible by trails that are not problematic in terms of resource or visual impacts. Monitoring of use and the potential resource impacts would occur and management of that use, including restrictions, may be necessary. (Resource indicator: damage to or defacement of the rock wall; detectable damage to associated biological or cultural resources. Resource standard: no defacement and only extremely small, incidental physical damage that is determined not to be cumulatively significant.)

Kinds/levels of visitor use:

Viewing these resources from various observation points would be the major use. The level of this type of use would be high and would be determined by the variety of available viewpoints, including not only specific overlooks but also viewing locations along the river, other streams, and trails. Rock climbing is an acceptable use under controlled conditions. The specific types of climbing and the amount of use would be determined by specific planning consistent with this prescription and applicable regulations.

Kinds/levels of development:

Specific development to permit observation of cliff faces would be provided as described under Cliff Edges, above. No development to facilitate climbing would be provided other than approved trail access.

- *Rock shelters*

Application:

These are the "shallow caves" that occur in many locations in the National Area, typically at the base of cliffs.

Desired resource conditions and setting:

Rock shelters are important as both natural and cultural resources. They provide special habitat for certain plant and animal species and they have provided shelter for humans from pre-Columbian times. While many have been previously disturbed by persons seeking artifacts, they would be generally characterized by natural conditions.

Desired visitor experience:

Visitors would have opportunities to learn of the values of rock shelters and the role they played in providing human shelter. These learning experiences would be available in literature and other media and in visiting selected sites.

Kinds/levels of management:

Protecting these sites from further human-caused disturbance would be the primary management objective. Additionally, opportunities for on-site observation at selected sites would be made available by trail access that may or may not actually enter the rock shelter. Scientifically conducted data recovery may be specifically permitted. Monitoring would occur and use managed or restricted as needed for protection. (Resource indicator: further evidence of human damage or disturbance. Resource standard: no further evidence of human damage or disturbance. Social indicator: persons in restricted locations or engaging in inappropriate activity. Social standard: no persons in restricted locations or engaging in inappropriate activity.)

Kinds/levels of visitor use:

All visitors would be on foot on any trails that enter these sites or their immediate vicinity. Most observation of rock shelters would be incidental to a visitor's activity, such as hiking or horseback riding. Some rock shelters, because of their features, would be specific destinations. Levels of use would be heavy at destination sites, especially where they are near other attractions. No camping would be allowed.

Kinds/levels of development:

Foot trails may be provided within selected sites; however, generally, they would be undeveloped and left natural. Existing trails may be relocated out of some sites. Information signs may be provided. Where horse trails approach sites and access to the inside is appropriate, hitching rails would be provided at a suitable location near a foot trail leading to the site.

- *Arches and chimneys*

Application:

These unusual, readily recognizable resources are found in a number of places within the National Area.

Desired resource conditions and setting:

These resources are relatively fragile for geologic resources because they are in their end stages of existence. Their visual interest is extremely high. They also often support unusual or rare vegetation. Some arches are large enough to offer human shelter or are otherwise important to humans and therefore also have cultural value. The natural processes of erosion would be protected.

Desired visitor experience:

Visitors would learn of the natural processes that formed these features, their fragility, and their other natural and cultural values. This information would be gained mostly off-site through various media. Visitors would be able to view these resources by means that protect the formations.

Kinds/levels of management:

Protection of the natural processes that formed and continue to erode these formations would be the primary management objective. These features would become more fragile with time and may need increasing degrees of protection. Management of these popular visitor sites would be continually reevaluated. Monitoring of conditions and visitor use would occur and changes made as needed. (Resource indicator: visible or otherwise detectable human-caused damage to the formation or associated vegetation. Resource standard: no detectable human-caused damage. Social indicators: persons in restricted areas; inappropriate behavior. Social standards: no persons in restricted areas; no inappropriate behavior.)

Kinds/levels of visitor use:

Visiting these features would occur mainly by trail access, although some can be viewed from a vehicle. Primary activities would be viewing and photography. Visitors would follow well-marked trails where casual wandering about is inappropriate. Levels of use would vary depending on location and access. Formations having high scenic value or easy accessibility would be heavily visited consistent with resource objectives. No camping would be allowed.

Kinds/levels of development:

Facilities would provide viewing opportunity while also providing resource protection and visitor safety. Foot trails would generally be the only facilities in the immediate vicinity of the site. Hitching rails would be provided on approaching horse trails. Development would be the minimum to achieve objectives.

- *Cultural spaces*

Application:

Certain areas and sites within the National Area have pronounced importance culturally. They exist in a variety of places and forms throughout the National Area. They range from small open fields used by previous landowners in the area to entire farmsteads with structures still standing. They include community, mining, and logging sites, cemeteries, railroad grades, bridges, and sites used traditionally for recreation. Some have more importance than others according to established standards, and some may be selected primarily for visitor use and interpretive purposes. The sites listed below and shown on the accompanying maps are those with known attributes and for which special management, including visitor use, is proposed, pending additional planning. Other sites may be added after further research.

- Oscar Blevins Farmstead
- Litton/Slaven Farmstead
- Litton/Slaven Fields
- Lora Blevins Farmstead

- Parchcorn Creek Farmstead
- Ranse Boyatt Farmstead
- Charit Creek
- Charit and Tackett Cabin
- Newtie King Farmstead
- Niter Mines
- Station Camp Historic Zone
- Historic Chimney Rock Cemetery
- Walnut Corner
- No Business Creek Community
- Beatty Salt Works
- Beatty Oil Well Historic Zone
- Rockhouse/Fire Tower Site
- Roysden Homesite

Desired resource conditions and setting:

Natural elements and processes cause changes in or deterioration of human-caused features. Fields grow up in forest and structures weather and rot away. Except where decisions are made based on certain criteria to preserve, rehabilitate, or restore these sites, the toll of natural processes would be accepted after appropriate documentation. Each area would be inventoried and classified for a certain type of management consistent with preserving identified cultural values and providing visitor use. This process would be a continuing one, although some have already been determined worthy of management intervention.

Desired visitor experience:

Visitors would have ample opportunity to gain an understanding and appreciation for the human life activities that occurred and still occur within the National Area. Visitor entry into these sites generally would be allowed, as determined by site-specific management objectives.

Kinds/levels of management:

Inventorying and classifying these sites and their features and determining their treatment would be an ongoing effort. Later detailed planning would also determine the exact, appropriate boundaries of an area. Because of the processes of deterioration on features selected for preservation, management activity would be intensive to minimize the effects of these processes. At times, personal services may be provided in the form of guided tours or an on-site resource person. Site-related cultural demonstrations may be provided. Sites and features would be monitored for changes/deterioration in an identified, desirable condition, for safety concerns, and for inappropriate use. Management of these sites may include the use of fire. (Resource indicators: varies with types of features, for instance: for fields, it could be woody stemmed plant invasion; for structures, loss of or damage to historic fabric. Resource standard: no unacceptable loss or damage based on periodic assessment. Social indicator: persons in restricted locations or engaging in inappropriate activity. Social standard: no persons in restricted locations or engaging in inappropriate activity.) Management of visitor use in some manner may occur as needed to achieve or maintain management objectives. Special management arrangements would be identified for cemeteries according to specific planning. Maintenance of cemeteries not owned by NPS would be a matter of coordination with the owners.

Kinds/levels of visitor use:

Visiting features or sites identified for preservation and/or interpretation would typically occur on foot. Activities would include viewing, photography, sketching, and learning from exhibits and literature. Well-marked trails may be provided if casual wandering about is inappropriate. For visitors arriving on horseback, or in some cases, vehicles, hitching rails or parking would be provided away from sensitive resources. For other features, trails may pass nearby and permit casual viewing. Levels of use would vary by site, depending heavily on its

proximity to other visitor attractions and whether or not the site was readily accessible. No camping would be allowed.

Kinds/levels of development:

Any facilities would be in keeping with cultural resource values and would include facilities identified as necessary to ensure protection of resources and provide for visitor education and safety. Trails, steps, railings, and signs would be common elements. Parking and hitching rails, if not intrusive, may also be provided. Structures needed for maintenance may be provided with specific approval and would be sensitively located and designed to harmonize with their setting and not degrade identified cultural values. Gorge restrictions on new structures would be followed.

- *Wetlands*

Application:

Wetlands are defined here to be those meeting criteria used by the U.S. Fish and Wildlife Service. These are generally identified by vegetation, undrained wet soils, or saturated or covered non-soil substrate. Most often, these include bogs, marshes, swamps, rocky streambeds, mudflats, and gravel beaches.

Desired resource conditions and setting:

These resources are important components of ecological systems and would remain as undisturbed by human activity as possible, while meeting site management objectives.

Desired visitor experience:

Visitors would learn about the values of wetlands and their different types. Visitors could experience wetlands firsthand, mostly those associated with large streams.

Kinds/levels of management:

Potential wetland impacts would be identified in the field on a project basis according to federal and state wetland regulations. Only in the cases where there is no practicable alternative would wetlands be disturbed or otherwise impacted. It is recognized that trail and road crossings of streams would occur throughout the National Area and associated wetlands crossed as well. Specific consideration of each instance would be undertaken, with priority given to known problem sites and any new construction. In cases where visitor use or development to support that use may directly affect or is in proximity to a wetland, NPS would monitor the use and effects and may relocate or restrict that use as necessary. (Resource indicators: detectable erosion/sedimentation; physical damage or loss. Resource standards: no indication of a trend in human-caused erosion/sedimentation or damage/loss.)

Kinds/levels of visitor use:

Visitor use of wetlands would result from fording streams by foot or horse, river access for fishing, wading, boat launching, and beaching float craft on natural banks or gravel bars. Levels would vary from seldom and incidental to frequent, depending on whether or not the site was designated for visitor use.

Kinds/levels of development:

Any development would consist of the minimum necessary to accomplish approved objectives and would be subject to specific policy guidance concerning wetlands, including the possible need for a Statement of Findings determination. Development may include trails and small boat launch ramps.

- *Rare, threatened, or endangered species*

Application:

This would include supporting habitat areas for species of concern listed currently or in the future by federal or state agencies.

Desired resource conditions and setting:

The natural conditions of these areas would be protected to the maximum extent possible, while allowing only those uses that are approved by specific analyses.

Desired visitor experience:

Visitors could learn about these species and their values mainly through off-site means such as literature and other media. Visual observation may be possible. Special educational visits may be led by qualified staff.

Kinds/levels of management:

Avoiding human disturbance of these areas is the general management objective. Where visitor use is allowed to come in contact with these sites, it would be under controlled conditions to the maximum extent possible. Monitoring of impacts would occur and management of use as necessary to minimize impacts. (Resource indicators: any detectable disturbance of these areas whether direct or indirect. Resource standard: sustainability of identified resources.) Where appropriate, habitat maintenance or restoration efforts would be undertaken in consultation with concerned agencies. Fire management may play a role in habitat maintenance.

Kinds/levels of visitor use:

Trail and river uses would be the types most involved in contact with these resources. Contact would be infrequent and incidental except in instances where designated use sites have been planned and approved. Photography would be a common activity.

Kinds/levels of development:

No development would occur in these areas unless it is compatible with related laws and specifically approved.

- *Rivers and streams*

Application:

All natural, perennial watercourses and their riparian areas and floodplains would be included in the Sensitive Resource Protection Zone. Not all streams are equal in importance; however, the nature of their contribution one to another indicates they be recognized as a unit.

Desired resource conditions and setting:

These resources would afford suitable habitat for native aquatic life and be an attractive and biologically safe resource for human recreational use. They would be unaffected adversely to any significant degree by contaminants as measured by accepted methods of assessment. They would be within state and federal water quality standards, and the Big South Fork River itself would meet the anti-degradation and non-degradation policy standards of Tennessee and Kentucky, respectively. They would be free-flowing in quantities typical of historic flow regimes, unaffected significantly by upstream developments. Riparian and floodplain areas would provide sustainable habitat for dependent species and be managed to protect natural values and human safety.

Desired visitor experience:

Visitors would learn about the natural processes and values of rivers and streams and their floodplains. Actual use of these resources would be enjoyable and occur in safe, appropriate ways and mostly at designated sites.

Kinds/levels of management:

General kinds of management actions would include inventories and research, monitoring, planning, coordinating with others, and impact assessment. The primary management objective would be understanding and protecting these resources while making them available for appropriate visitor use. The intensity of management would vary by watercourse, with waters providing important habitat and significant recreational use receiving the highest management attention. Monitoring would occur and management actions taken to maintain or achieve objectives. It is conceivable that within the life of this plan that use, particularly river floating, could begin to exceed desirable levels and, therefore, would be subject to restriction if other means to modify use proved ineffective. (Resource indicators: accepted physical, chemical, and biological parameters, including mussels and species diversity. Resource standards: no violation of accepted standards or trends indicating a violation; no degradation in Big South Fork River; no trends in decreasing numbers of mussels or species diversity. Social indicators: visitor activity on, in, or near these resources; visitor dissatisfaction. Social standards: no visitor activity that would be inconsistent with achieving or maintaining objectives; no substantial dissatisfaction as determined by survey or complaints.)

Kinds/levels of visitor use:

Many activities depend on water and many others are enhanced by it. Typical water-dependent activities would be rafting, canoeing, kayaking, fishing, and wading. Land-based activities that would "use" these water resources include trail uses where users actually ford the stream or river. Activities enhanced by the sights and sounds of water would include any nearby trail use, camping, and picnicking, and viewing from overlooks. Levels of use would vary, with heavy use occurring at designated sites at popular use times.

Kinds/levels of development:

Development actually within the watercourses would be minimal and sufficient only to provide for appropriate use at suitable, approved locations. Facilities may include watercraft launching sites, steps, and stabilized, marked trail crossings. Any development in riparian and floodplain areas (e.g., bridges) would be compatible with National Area legislation and other federal and state laws and regulations governing waterways and floodplain areas, and would include the preparation of a Statement of Findings if appropriate. Trails along streams within the riparian zones would be allowed only when needed to provide desirable access and where resource impacts could be minimized.

- *Special scenery*

Application:

This zone would be applied to sites and areas that are either especially scenic themselves or offer prime scenic views. Because of their locations in relation to scenic resources, these sites and areas are heavily visited and/or used in ways that can detract from the experiences of others. These areas would typically be co-located with many of the sensitive resource zones discussed above; for example, cliff edges and arches. Specific examples include Twin Arches, Honey Creek Overlook, Angel Falls Overlook, Maude's Crack, Sawtooth, and Yahoo Falls. Generally, this zone would be applied to areas within 300 feet of all designated overlooks, developed or natural, and well-known geological formations, including arches, chimneys, and rock shelters. Specific sites and their boundaries would be identified in a Backcountry Management Plan. As future studies may identify additional sites having visitor use potential, this zone may be applied.

Desired resource conditions and setting:

Natural resources and processes would be protected. Cultural resources, where present, would be managed according to identified cultural resource objectives. Where co-located with another sensitive resource zone, those management prescriptions would take priority. The setting would also be protected and managed to enhance scenic values.

Desired visitor experience:

The visitor experience would be one of being allowed to unhurriedly focus on the scenic values of the site or area and not be unduly disturbed by unrelated human activity. Scenic enjoyment would be the priority and not other types of use. For example, camping in or near a popular scenic place would not be appropriate.

Kinds/levels of management:

Management would be intensive since these sites and areas would typically be popular to visit. It is reasonable to think that these sites could become so popular that some management of visitors may become necessary to protect resources and the visitor experience visitors seek. Monitoring of use would occur to enable management to take appropriate action. (Resource indicator: detectable damage to resources. Resource standard: no detectable damage to resources. Social indicators: visitor comments, either volunteered or by survey, expressing dissatisfaction or concern with being able to enjoy the scenic values offered by a site; evidence of inappropriate, unrelated uses of a site. Social standards: visitor dissatisfaction expressed voluntarily or through surveys; no inappropriate or unrelated uses.)

Kinds/levels of visitor use:

Sites would typically be approached by foot trail even though parking may be provided nearby. Use of these sites would include scenic viewing, photography, and other passive uses related to exceptional scenery. Types of uses that would interfere with the desired visitor experience would be disallowed. Use levels would tend to be high at these sites, particularly those near development sites and trailheads.

Kinds/levels of development:

Development would be sufficient to allow the desired visitor experience and provide for visitor safety. For sites easily reached, this may include platforms, railings, and signs. In more remote areas, fewer facilities may be provided, or none at all. Any development would harmonize with the setting to the maximum extent possible to avoid being unduly intrusive.

- *Sensitive resource area overlay*

Application:

The sensitive resource area overlay differs from the previous resource-specific zones, and is not actually a zone itself. This special overlay is used in various locations to enclose, or group together, several different sensitive resource zones as a practical means of highlighting their presence. Rather than relying solely on the specific resource zones themselves, which can be small with obscure boundaries, Alternative D also includes the overlay, which encompasses a larger, more easily recognizable area. Such an overlay provides a means to locate appropriate, educational signage that can be placed on approaching roads and trails. The overlays would serve National Area personnel, as well as visitors, by providing map location of easily recognizable, sizable areas in which to be especially cautious to the presence of sensitive resources. The overlay area would not be subject to any additional management prescriptions beyond those of the other identified zones. The overlay may change over time if new sensitive resources are identified and reconfiguration of the overlay is deemed appropriate by National Area management.

FIRST ORDER DEVELOPMENT AND VISITOR USE ZONE

Application:

These zones would designate readily accessible concentrations of visitor or administrative facilities. They would include the nearby surrounding areas that are typically heavily used because of their proximity and may be used for overflow situations and possible future facility expansion. They are generally located where environmental concerns can be relatively easily managed. With the exception of the Blue Heron mine exhibit area, these zones would only be located outside of the designated gorge. They include:

- Bandy Creek
- Blue Heron
- Headquarters Area

Desired resource conditions and setting:

These units would essentially be designed landscapes planned in harmony with their surrounding natural communities. Native vegetation would occur as backdrop, screening, and facility landscaping. Landscape modification for visitor and administrative needs would be accepted with prior planning and compliance.
Desired visitor experience:

Visitors would have a feeling of being in a natural setting but provided with familiar conveniences. Visitors would find a highly structured experience supported with specific facilities. Visitor movement within these units would present little to no challenge, including for those with disabilities. Visitors would find a high level of information service. Encounters with other visitors and with NPS personnel would be common and expected. Within administrative areas, certain facilities or grounds may be unavailable to visitors. All administrative facilities would harmonize with the natural surroundings or be screened from view.

Kinds/levels of management:

An intensive level of management would be required to minimize, mitigate, and monitor resource impacts and ensure visitor safety in this highly used unit. Facility maintenance would be high priority. Interpretation and education would be key management activities and would often include personal services. During the life of this plan, it is entirely possible that visitor use within some or all of these units could exceed the current capacity to sustain that use without adverse effects. At such time, management actions could include redirecting, restricting, or expanding opportunity within the units. Any new facilities would be subject to specific planning and compliance. Fire management would include total suppression for personal safety and protection of infrastructure. Management for fire protection may include cleared areas immediately adjacent to structures. Waste management would be important to protect wildlife as well as visitors. (Resource indicators: water quality in streams exiting or near the units; vegetation damage; evidence of wildlife invading trash receptacles. Resource standards: absence of water quality compliance issues; no trend indicating permanent loss or damage to vegetation; no evidence of wildlife/trash contact. Social indicators: obvious inability (formally or informally derived) by official personnel to meet visitor expectations; widespread damage to facilities and grounds clearly related to legitimate overuse. Social standards: sustained ability of official personnel to meet the reasonable expectations of most visitors during traditional high-use periods but not at peak days or hours; no damage beyond reasonable wear and tear determined by post-season assessment.)

Kinds/levels of visitor use:

Visitors to this unit would include campers, picnickers, and others using the variety of facilities available in the unit. Many visitors would come seeking information and then go on to other zones of the National Area. The number of visitors would vary by time of year but large numbers occur during popular high-use periods. Visitors would typically not use administrative areas.

Kinds/levels of development:

Facilities provided in this unit would include almost any type that would meet the needs of visitors while remaining consistent with resource management objectives and the purpose of the National Area. Typically, they would include visitor contact offices, exhibit display spaces, educational spaces, book and selected supply sales spaces, storage spaces, camp grounds, picnic areas, play spaces, internal roads and trails, parking, sidewalks, rest rooms, water supply and treatment facilities, and waste disposal and solid waste collection points. Design standards applied would sustain heavy use. The level of development would vary, but would be fairly intensive. Administrative areas would typically contain offices, storage space, and work areas.

SECOND ORDER DEVELOPMENT AND VISITOR USE ZONE

Application:

This zone type would designate areas of limited visitor facility development typically situated at or near a resource attraction. These zones would only occur outside the designated gorge or be associated with a legislatively designated gorge access route. Like First Order zones, they would include some surrounding area that may be used for overflow situations and possible minor facility expansion. They are also located where environmental concerns would not be a significant issue. These are numerous and are identified later in the maps and accompanying text showing specific sites. Examples are Yahoo Falls, the Bear Creek and Station Camp horse camps, and Burnt Mill Bridge.

Desired resource conditions and setting:

Much smaller than Primary Development and Visitor Use Units, these units would also be designed landscapes situated in harmony with their surrounding natural communities. Native vegetation would occur as backdrop, screening, and facility landscaping. Landscape modification for visitor facility needs would be accepted with proper planning and compliance.

Desired visitor experience:

Visitors would have a feeling of being in a natural setting with just enough facilities to allow fairly easy and comfortable participation in the targeted activity. Extra conveniences are not a priority and use would only be minimally to moderately structured. Depending on the site, those with disabilities may find participation to be moderately challenging. Information found would only be site oriented. Encounters with other visitors and with NPS personnel would be fairly common and expected.

Kinds/levels of management:

Management would be intensive to minimize, mitigate, and monitor resource impacts and ensure visitor safety. Facility maintenance would be high priority. Units with historical connections may be interpreted for visitor education through on-site media and available literature. During the life of this plan, it is entirely possible that visitor use within some or all of these units could exceed the current capacity to sustain that use without adverse effects. At such time, management actions could include redirecting, restricting, or expanding opportunity within the units. New facilities would be subject to specific planning and compliance. Fire management would vary depending on the amount and type of facilities at a site, and may not include total suppression. Management for fire protection may include cleared areas immediately adjacent to any structures. Waste management would be of utmost importance in this zone as it is where a significant human/wildlife interface would occur. Proper management of garbage disposal would protect the visitor and prevent wildlife from being attracted to the area. (Resource indicators: water quality in streams exiting or near the units; trampled vegetation; evidence of wildlife invading trash receptacles. Resource standards: absence of water quality compliance issues; no trend indicating permanent loss or damage to vegetation; no evidence of wildlife/trash contact. Social indicators: visitor dissatisfaction; widespread damage to facilities and grounds

clearly related to legitimate overuse. Social standards: no significant level of expressed dissatisfaction as determined by survey or voluntary complaints; no damage beyond reasonable wear and tear determined by post-season assessment.)

Kinds/levels of visitor use:

Visitors to these zones would typically engage in camping, picnicking, fishing, wading, boating, and hunting in season using the unit as a base. Most visitors to these units would be repeat visitors familiar with a particular unit's location and offerings. These units would typically receive frequent use from local area residents. The number of visitors would vary by time of year but units would generally be well used during popular high-use periods.

Kinds/levels of development:

Facilities provided in these units would vary depending on the purpose of the site. Typically, they would provide facilities for one or two activities, such as picnicking and stream wading or camping and fishing. Specific facilities could include campsites, picnic tables, stream access, launching ramps, and toilets. Development levels would be low to moderate although generally low, but facilities may be concentrated within a small area. Facility design would harmonize with the surroundings. Design standards applied would vary between sites depending on their purpose and location.

ACCESS ZONE

Application:

This zone would designate small sites that provide convenient vehicle parking primarily for purposes of trail access. These zones would only occur outside the designated gorge or be associated with a legislatively designated gorge access route. These are numerous and are identified later in the maps and accompanying text showing specific sites. Examples are Dick's Gap Trailhead, Terry Cemetery Trailhead, Station Camp Day Use Trailhead, East Rim Trailhead, and Rugby Trailhead.

Desired resource conditions and setting:

These sites would be situated unobtrusively in a natural setting, which would be cleared only for the immediate footprint of the needed parking area and any associated short access road. No site would be located near sensitive resources.

Desired visitor experience:

Visitors would find convenient, suitable parking and trail information in places where trail access is appropriate. Encounters with other visitors and with NPS personnel would be fairly common and expected.

Kinds/levels of management:

Management would be much less intensive than in the other development zones. It would be sufficient to ensure continuing serviceability of the facility and to monitor resource impacts. On-site media would provide at least basic visitor information. There would be no personal services except occasionally for a guided activity. Should visitor use within any of these units exceed their capacity, management actions could include redirecting, restricting, or expanding the opportunity. Any expansion would be subject to prior planning and compliance. There would be no specific fire management objectives for these zones, i.e., they would be the same as for the surrounding zone. Waste management would be important to protect wildlife as well as visitors. (Resource indicators: damaged vegetation; evidence of wildlife invading trash receptacles. Resource standards: no trend indicating permanent loss or damage to vegetation; no evidence of wildlife/trash contact. Social indicators: off-site parking clearly related to legitimate overuse. Social standards: no off-site damage.)

Kinds/levels of visitor use:

Kinds of visitors would include trail users of various types, depending on the nature of the trail(s) accessed at a given location. Levels of use would vary depending on the remoteness of the location and popularity of the trail. Use would generally be high at popular heavy-use times.

Kinds/levels of development:

These sites are basically for parking, and, therefore, would include at least a level area suitable for vehicles. The sites may be graded and improved with appropriate surfacing, such as gravel. Timbers may mark the limits of the parking area. Very short access, or connector, roads may be a part of these zones, which would typically also have informational signage. Where appropriate, sanitary facilities may be provided.

FIRST ORDER TRANSPORTATION ZONE

Application:

This zone designates road corridors providing access to First Order Development and Visitor Use Zones. Through traffic routes are also included in this unit. These include:

- KY 92
- KY 1363
- Blue Heron Road
- TN 297
- East Bandy Creek Road
- TN 154
- TN 52

Desired resource conditions and setting:

Resources in these road corridors would only necessarily be impacted to meet objectives of vehicle movement and passenger safety. These corridors would relate harmoniously to the surrounding environment with a minimum of adverse effect on natural processes.

Desired visitor experience:

Visitors would travel safely while within the National Area. They would have a sense of being in a park-like setting that is esthetically more pleasing than highways outside the National Area. Even though most of these corridors support through traffic, visitors would feel free to drive at speeds somewhat slower than posted limits. Vehicle congestion would not significantly affect the visitor experience. Visitors would have adequate information to navigate to intended destinations.

Kinds/levels of management:

Safety, efficiency, resource and experience sensitivity, and not speed and convenience, would be general management objectives. Maintenance would be high priority and esthetically sensitive. Informational signing would be very important as would dissemination of information to those on approaching roadways. Since others may own the right-of-way, coordination and cooperation with other agencies regarding signing, speed limits, and maintenance would be an important management function. Speed limits may be lower inside the National Area. While the road prism itself would be considered essentially permanent, related features such as drainage and slopes may be altered if monitoring indicates adverse resource effects are occurring. (Resource indicators: water quality of streams affected by roadway drainage; sloughing or erosion of slopes; invasive

exotic plants in road corridor. Resource standards: absence of water quality compliance issues, including trends; no clearly visible signs of a worsening physical condition; absence of invasive exotic plants. Social indicators: roadway level of service during high use times; visitor dissatisfaction. Social standards: levels of service no lower than "C" (moderate congestion/delays) over peak hours; dissatisfaction determined significant through surveys or by substantial visitor complaints.) Related management actions may include emergency spill operations, exotic plant control, coordination with other agencies, information dissemination, and redirecting traffic.

Kinds/levels of visitor use:

Vehicle types would include any that are "street legal." Certain types may be limited or restricted due to their large size. These corridors would have high levels of use.

Kinds/levels of development:

Roads in this zone would normally be designed and paved to sustain a high level of use by passenger vehicles and light trucks. Some may be designed to carry heavy-duty trucks. More than just the road itself, the corridor would include shoulders, related drainage features, safe zones, and slopes. It may include pullouts. The width of the zone would be considered the area cleared and graded. This area would be the minimum necessary and still conform to applicable road design standards.

SECOND ORDER TRANSPORTATION ZONE

Application:

This zone designates road corridors providing access to Second Order Development and Visitor Use Zones. Examples include the road to Alum Ford, Station Camp Road, Twin Arches Road, and Honey Creek Road. This zone also applies to the Kentucky and Tennessee Scenic Railroad.

Desired resource conditions and setting:

Resources in these road corridors would only necessarily be impacted to meet objectives of vehicle movement and passenger safety. These corridors would relate harmoniously to the surrounding environment with a minimum of adverse effect on the natural setting and processes.

Desired visitor experience:

Visitors would be in a mostly natural setting, traveling rather slowly either to sightsee or to visit a specific place in the National Area. Travelers would arrive at their destinations safely. Seeing other vehicles would be fairly common and expected. Vehicle congestion would not significantly impact the visitor experience. Visitors would have adequate information to navigate to intended destinations.

Kinds/levels of management:

Safety and sensitivity to resources and the visitor experience would be general objectives. These routes would be well traveled since they would provide access to most of the National Area's attractions and, therefore, maintenance would be a high priority. Informational literature and signing would be very important. Speed limits would be lower than in First Order Transportation corridors. While the road prism or railbed itself would be considered essentially permanent, related features such as drainage and slopes may be altered if monitoring indicates adverse resource effects are occurring. (Resource indicators: water quality of streams affected by roadway drainage; sloughing or erosion of slopes; invasive exotic plants in road corridor. Resource

standards: absence of water quality compliance issues, including trends; no clearly visible signs of a worsening situation; absence of invasive exotic plants. Social indicators: roadway level of service during high use times; visitor dissatisfaction. Social standards: level of service "C" (moderate congestion/delays) over peak hours; dissatisfaction determined significant through surveys or by substantial visitor complaints.) Related management actions may include information dissemination, and redirecting traffic.

Kinds/levels of visitor use:

Vehicle types would be "street legal" and include all types, except certain types may be limited or restricted due to their large size. The amount of use of these corridors would vary. Most would receive moderately heavy use during popular high use periods. The Kentucky and Tennessee Railroad would offer scenic rides and provide a different type of access to selected development and visitor use zones.

Kinds/levels of development:

Roads in this unit would normally be designed and improved to sustain a moderate level of all-season use by passenger vehicles and light trucks. Design speeds would typically be 35 miles per hour or less. These roads would normally be two lanes wide and graveled. The corridor would include shoulders, related drainage features, safe zones, and slopes. It may include pullouts. The width of the unit would be considered the area cleared and graded. This area would be the minimum necessary and still meet management objectives. The zone for the railroad would include the tracks, rail bed, and related drainage features (all area and facilities covered by the right-of-way owned by the railroad) and may include appropriate, related facilities as determined by both the operator and NPS.

ALL-TERRAIN VEHICLE (ATV) PLANNING AREA

Application:

Not really a zone, the ATV Planning Area designates two locations on the plateau, or "adjacent area," where specifically designated ATV trails would be considered. It would be applied to (overlaid on) selected plateau portions of the Natural Environment Recreation Zone only. The two locations designated for possible ATV use are on Darrow Ridge. Initial trail selection would be considered experimental, with expansion or elimination considered after evaluation. The ATV Planning Area cannot be expanded to include additional locations without formally amending the GMP.
Desired resource conditions and setting:

Since this planning area is a use-oriented overlay on the Natural Environment Recreation Zone, the desired resource conditions would remain the same as for the Natural Environment Recreation Zone as described above, i.e., generally, the protection of natural processes and naturally maturing forest. The planning area includes lands that are determined to be able to sustain a network of trails without adversely affecting resources or the experiences of others, including the effects of noise. Some resource manipulation would occur to provide a trail that meets design standards.

Desired visitor experience:

Users of ATV trails within this area would experience a generally natural setting that may be disturbed with past or current non-recreational land uses, such as oil and gas operations. The experience would combine the goals of viewing resources and having an enjoyable ride. Speed, acrobatics, and other skill-oriented challenges would not be purposes of the experience. Some visitors would use the trails specifically to visit a particular place, while others may use them for general riding purposes only.

Kinds/levels of management:

Specific trails inside these areas would be designated for use. Standards would be applied for use, any new trails, and maintenance. Old roads would be used where possible. Trails would avoid perennial stream crossings. Use may be managed by permit to monitor patterns of use as well as the use of appropriate equipment such as stock mufflers and spark arrestors. Speeds would be monitored and limits may be set. An initial experimental trail would be planned for the near-term to allow National Area management to evaluate the effects of a specifically designated trail. Decisions on expansion or elimination of trails would be made following evaluation. Monitoring the condition of the trails for user safety, user satisfaction, and resource impacts would occur. Representatives of environmental and ATV-user groups would be invited to participate in the monitoring effort. Official trail changes, including relocation or restrictions, may occur. Where existing oil and gas access roads may be used, prior coordination with industry operators would occur. (Resource indicators: tread erosion; tread widening; damaged vegetation; creation of new routes by users. Resource standards: no signs of significant tread erosion or widening; no permanent vegetation damage; no visible signs of user-created routes. Social indicators: accidents, injuries, and complaints. Social standards: no sustained level or trend of accidents, injuries, or complaints.)

Kinds/levels of visitor use:

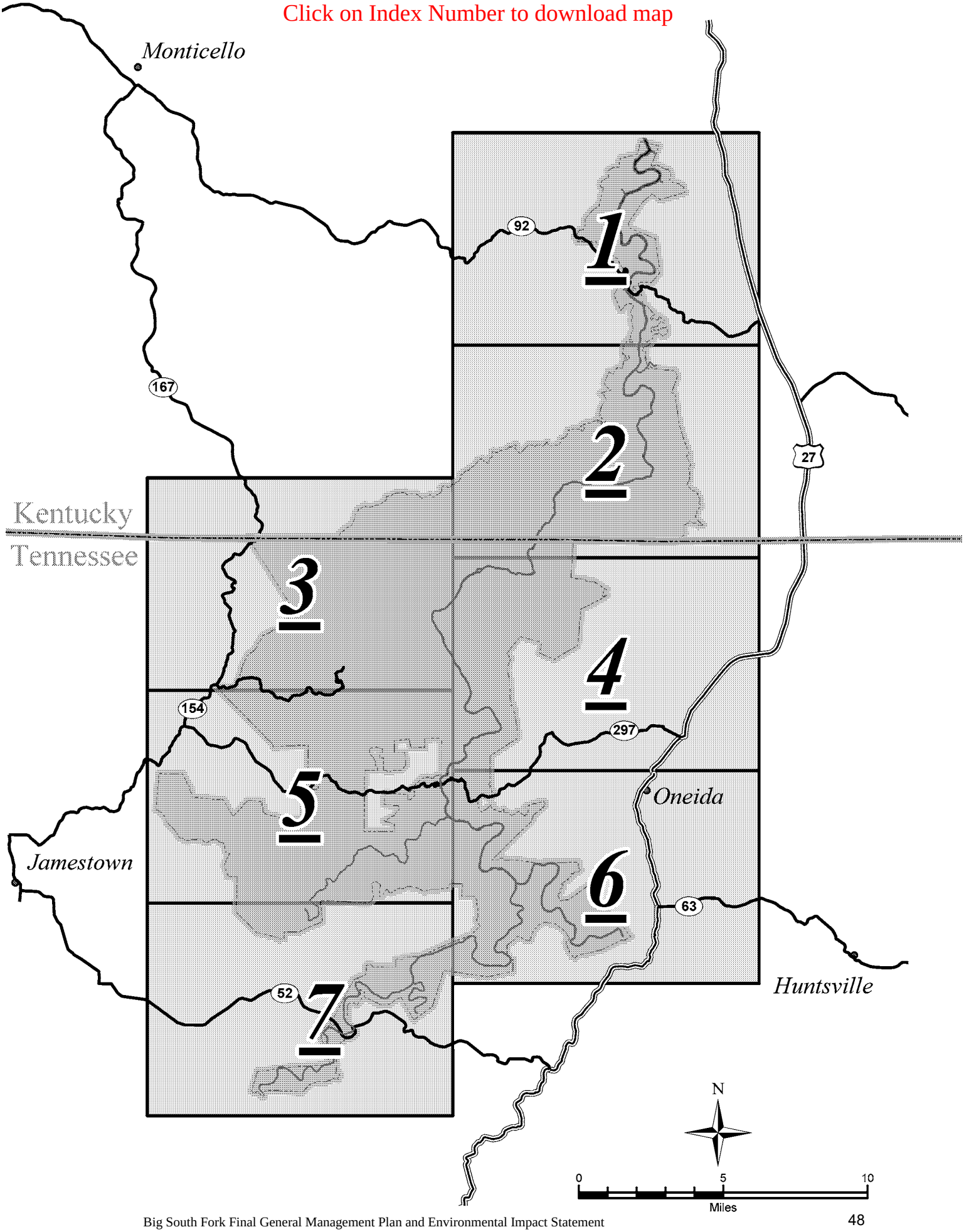
For the experimental trail and any subsequent trails, only vehicles that are driven by sitting astride the vehicle and using handlebars would be allowed. These trails would be intensively used, particularly during popular high use periods; however, sensitivity to resources and other users would be the basis for determining the acceptable extent of use.

Kinds/levels of development:

Other than designated trails, staging areas would be provided that would include parking for vehicles with trailers and may include campsites, toilets, and potable water. Development levels could vary by site and would be sized according to the amount of associated trail opportunity.

ZONE MAP INDEX

Click on Index Number to download map



Land Ownership – Alternative D

With a minor exception, no changes are included in the plan with regard to the National Area's exterior boundary. Similarly, no changes are proposed in the amount of land—125,000 acres—authorized by the legislation to be acquired. The plan reaffirms the present intent to acquire the remaining private lands within the boundary (approximately 5,900 acres). The exception refers to the 20-acre outlying parcel on TN 297 east of the National Area. Originally acquired for the National Area's headquarters, this parcel is no longer being considered for use.

Centrally located within the National Area, Scott State Forest virtually surrounds the National Area's most highly developed site, Bandy Creek. As such, it remains an unusual land use arrangement, but one which has been very cooperative. Visitors using the many designated roads and trails crossing state land are generally unaware of that fact. Its use is critical to the continued provision of visitor services at Bandy Creek. The primary mission of the state forest is the propagation of White pine, a monoculture that is actually inconsistent with the NPS mission of promoting species diversity and natural processes. The plan includes the acquisition of these lands at such time as the state is willing, since state lands can only be acquired by donation pursuant to National Area legislation.

Resource Management – Alternative D

The desired resource conditions identified for each type of zone indicate the resource objectives for all portions of the National Area. (See the previous discussion in this chapter on zones.) The kinds and levels of management, use, and development for each zone provide an outline for achieving and maintaining those conditions.

In addition to the zone-specific management objectives, National Area personnel would continue or commence the following strategic efforts on a National Area-wide basis (the following are not necessarily in priority order and do not encompass all concerns):

- *Development of a watershed protection strategy through data collection and management improvements and increased coordination with others; special, near-term initiatives of reclaiming resources contaminated by mine drainage and coordinating with surrounding communities concerning water needs*

Of prime importance is water quality management. Congress recognized the significance of the Big South Fork of the Cumberland River by specifically including as a purpose of establishment the preservation of the river, including its free flowing character. Other purposes for establishment are based on the river's—and its tributaries'—quality and quantity, including the preservation and interpretation of, among others, scenic and fish and wildlife values, the natural integrity of the gorge, and healthful outdoor recreation.

A primary issue is the fact that the National Area includes only the "bottom" fourteen percent of the entire drainage. In other words, virtually all water draining the watershed flows through the National Area, whether it is good quality or not. Many streams inside and outside the National Area have been and some continue to be contributors to various types of water quality problems, e.g., sediment, toxic chemicals, and low pH levels.

Treatment and cleanup of contaminated mine drainage sites would occur in the gorge. Specific planning and compliance would be undertaken. It is believed that work would involve several sites of various sizes, would need to be accomplished by large machinery, would result in permanent landscape change, and would need to be maintained in perpetuity. Such actions appear necessary to eliminate or minimize this long-standing water quality issue.

Beneficial cooperation with the two states and several federal agencies has resulted in rehabilitation of coal spoil sites, some deep mine closures, and a new sewage treatment facility. Expanded monitoring and coordination with others influencing water quality is needed. Additional research involving water quality problems is also needed.

- *Development of the Inventory and Monitoring Program and its integration into National Area management*

More expansive than just the water quality issues is the development of an integrated, strategic system of inventorying key resources and monitoring their condition. Much basic information remains to be collected, stored, and analyzed in order to effectively achieve and maintain the desired resource conditions.

- *Expansion of the cultural resource management program; special, near-term initiatives of defining and managing cultural landscapes and enhancing the management of museum collections*

Previous research within and around the National Area provides significant information, but management and interpretation needs were not a consideration of much of this work. Essential information is still needed. Completion of the archeological survey is a high priority. This survey would consist of locating historic and prehistoric sites, establishing a cultural chronology, and making evaluations of significance. Proper storage is needed for data and collections. Historic Resource Studies are needed for National Register qualified structures followed by stabilization/rehabilitation plans and maintenance guides. Landscape studies are needed to document and determine the preservation and interpretation objectives of the several historic farmsteads.

- *Continued development of the oil and gas management program, including completion of plans of operation, plugging abandoned wells, and reclaiming disturbed lands*

Minerals management has been and would continue to be a concern. Legislation provides for exploration and development along strict guidelines, but the nature of the products and related infrastructure and probable future demands are cause for increased attention. A minerals management plan would include plan and permit reviews, field monitoring, site reclamation, data maintenance, coordination with various agencies, and investigations of spills and other detrimental disturbances.

While potential adverse effects on National Area values may occur as a result of oil and gas production, the reverse may also be true. Increasing visitor use could result in conflicts with this legitimate use. For example, visitors and industry vehicles may be traveling the same route at the same time, or visitors may find objectionable some of the industry's operations and facilities. Coordination of each other's planning and projects through the procedures established by 36 CFR 9B and the NPS' compliance policies and procedures would promote compatible activity. Visitor education would also be important.

- *Continued enhancement of biodiversity; special near-term initiatives involving restoration of extirpated species, augmentation and reintroduction of freshwater mussels, and reintroduction of native grasses*

Currently, much more information is needed on ecosystem dynamics within the National Area. Consequently, past and present uses and abuses and their impacts on resources are not sufficiently understood. Only a relatively few targeted projects have been initiated, and a multitude of others need attention, some of which are mentioned above.

- *Continued development of a fire management program*

The use of fire as a management tool to protect persons and property and also to promote resource objectives is a priority concern. Recent damage in other parts of the country has heightened the concerns of land managing agencies, including NPS. The National Area is in process of completing a fire management plan that provides guidance for dealing with both undesirable and desirable fire events.

- *Identification and implementation of method(s) for trail/stream crossings that protect aquatic species, particularly mussels*

Roads and trails necessarily cross streams and drainage ways since the drainage pattern in the National Area is so dense. Mostly, the concern is how to cross a stream or drainage and not whether it should or should not

be crossed. There are exceptions since many ridges offer suitable locations. Ridges generally carry the roads and many trails; however, trails very often cut across the terrain, or drainage pattern. Crossings can lead to bank erosion and sediment loading of streams, stirring up of stream bottoms, disturbance to habitat, and contribution of animal waste. Of immediate concern are crossings that affect federally endangered mussels, and coordination would continue with the U.S. Fish and Wildlife Service. Special project funding to study this issue has been requested and is receiving review within the agency.

- *Development of a fields management program and plan, considering the potential purposes of native grass reintroduction, native wildlife management, cultural landscapes, agricultural leases, recreation, and administrative needs*

Over 100 open fields of various sizes totaling almost 800 acres dot the landscape of the National Area. Decisions are needed and management plans developed for those areas to be kept open and not allowed to naturally revert to forest. Use of these areas has served and can continue to serve a variety of purposes, but currently there is no overall direction. Ponds exist in many fields, and decisions are also needed on their use.

- *Continued enhancement of the National Area's visitor education and outreach program with increased resource information*

A natural consequence of increased resource information is a greater factual basis on which to develop the National Area's education and interpretive programs. Increased visitor knowledge would contribute importantly to resource management goals.

Resource issue-specific plans and studies would continue to be conducted by NPS or through coordination with others. These could include, but not necessarily be limited to, the following, in alphabetical order:

- ✓ Archeological Surveys (completion)
- ✓ Backcountry Management Plan
- ✓ Black Bear Management Guidelines
- ✓ Cemetery Management Plan
- ✓ Climbing Management Plan
- ✓ Collections Management Plan

- ✓ Cultural Landscape Reports
- ✓ Endangered Species Recovery Plans (as needed)
- ✓ Equestrian Livestock Management Plan
- ✓ Exotic Species Management Plan
- ✓ Fields Management Plan
- ✓ Fire Management Plan

- ✓ Historic Structure Preservation Guides
- ✓ Historic Structure Reports
- ✓ Individual road, trail, and development site evaluations, comparing desired project with GMP/EIS
- ✓ Integrated Pest Management Plan
- ✓ Monitoring Plans/Protocols

- ✓ Oil and Gas Management Plan
- ✓ Section 9B Oil & Gas Operations Plans
- ✓ Study of River Crossings by Horse Trails
- ✓ Trail Condition Assessment/Protocol
- ✓ Vegetation Management Plan
- ✓ VERP (Visitor Experience and Resource Protection) or similar study to address carrying capacity
- ✓ Wildlife Management Plan

Specific studies and actions are considered and prioritized in the preparation of the National Area's Strategic Plan, pursuant to the requirements of the Government Performance and Results Act.

Visitor Education and Orientation – Alternative D

A Comprehensive Interpretive Plan is the foundational planning document for identifying in detail the information and "stories" National Area visitors should be offered. Current efforts are thematically structured but not according to a comprehensive plan. Available personnel make significant efforts to provide information to visitors and to the public at sites outside the National Area, such as schools.

Wayside exhibits, or informative signs, are located throughout the National Area to convey information; however, these are becoming dated. A phased wayside exhibit plan was prepared but only partially implemented due to lack of funding. Completion of wayside planning is awaiting completion of the general management plan. More interpretation of available resources is needed for expanding visitor education and appreciation. Resource management objectives could benefit by increasing the presentation of resources and their past and appropriate future uses.

Waysides are complemented by "off site" media, or materials, such as books, pamphlets and amphitheater talks. Guided tours, such as on the Big South Fork Scenic Railway, and guided walks are available. National Area partners providing river and horse trips also provide educational information to those using their services.

Special events currently include several programs and demonstrations illustrating thematically related subjects. These include story telling, a "spring planting," Cumberland Heritage Days, and a "longhunter pioneer camp" program depicting early exploration of the area.

Overall themes guiding the educational program would be systematically identified in the Comprehensive Interpretive Plan. Themes would relate to the National Area's purpose, its resources, their significance, and their use over time, including the terrestrial and aquatic ecosystems, early human use and exploration, early farm life, the extraction of natural resources, and recreational use.

Outreach to local community schools would continue to complement on-site personal services and facilities. Increased educational space is needed in the Bandy Creek area, and the plan includes this. No specific location has been determined, although use of existing structures would receive first consideration. On-site educational efforts would continue to be focused on the Bandy Creek and Blue Heron Mine developed areas, with guided activities offered throughout the National Area focused on specific resources.

The National Area does not have an extensive internal circulatory road system due to its terrain. Therefore, visitors must travel on the surrounding highway network to reach attractions in various locations. The plan includes visitor contact/orientation stations in several locations outside the National Area (discussed further under Development Highlights, below). Visitors would be able to plan their trips more effectively than at present, which currently involves driving into the center of the Area.

The desired visitor experience identified for each type of zone, like the desired resource conditions, indicates the general visitor experience objectives for various sections of the National Area. (See the previous discussion in this chapter on zones.) The kinds and levels of management, use, and development for each zone provide an outline for achieving and maintaining those conditions.

Studies and plans needing attention that deal with visitor use, education, and resource interpretation include the following, in alphabetical order:

- ✓ Commercial Services Plan
- ✓ Comprehensive Interpretive Plan
- ✓ National Area-wide Sign Plan (directions and orientation), including directional signing on the surrounding road network
- ✓ Wayside Exhibit Plan (update)

Development Highlights/Introduction – Alternative D

Following are summary highlights regarding developed facility sites and also roads and trails. More detail is provided later in this chapter in the form of maps and itemized text.

No significant change is proposed in the overall level of development. Generally speaking, internal development is believed sufficient for use over the planning period. Certain additional facilities are identified and proposed that would fill identified gaps. Some existing development sites could be improved. There are heavy use times when certain facilities are crowded. Other ways of providing certain visitor services would likely be needed as visitation increases. Other than facilities that can only be provided inside the boundary, there are other facility types and services that could be provided by outside private interests in the surrounding area and in many instances are currently being provided. These include overnight accommodations (e.g., motels, campgrounds, bed and breakfasts), food services, groceries, equipment and supplies, guide services, and related or supplementary attractions.

Outreach to surrounding counties and towns would continue in order to strengthen and increase the benefits of being located together on the Cumberland Plateau. With no significant additional visitor facilities included in the plan for inside the National Area other than a basic system of roads, trails, and access points, the surrounding outside area would be in position to provide what visitors want and need to supplement their visits. Attractive resources exist outside the National Area, both natural and cultural. Many of these have already been recognized and are already being marketed. More could be. Efforts are being made to show visitors to the region how they can combine a number of areas and attractions for a more comprehensive visit. This can only increase the potential for longer stays by visitors and more return visits. Efforts at Stearns and Rugby are particularly notable. The restoration of the Barthell mining community by private interests is as well.

Cooperation would specifically be sought to jointly provide services outside the National Area that would provide visitors and travelers with information about area opportunities. The Stearns Depot visitor center, co-located with the Big South Fork Scenic Railway, is an example of an off-site visitor facility with a park partner. Opportunities exist to cooperate with others for more comprehensive and effective visitor service. Suitable locations would be in or near Oneida-Huntsville, Jamestown, Rugby, and the Stearns-Whitley City-Winfield area.

The plan also reaffirms the NPS partnership mentioned in the National Area legislation with Rugby and with the McCreary County Heritage Foundation, operators of the Big South Fork Scenic Railway. These entities continue to expand and promote their offerings to the general public. Their relationship to the National Area is mutually beneficial, offering visitors a greater variety of related experiences. Cooperation has been excellent and, in the case of the railroad, NPS has no current plans to exercise the legislative provision that allows the acquisition of any necessary easements for resource protection.

Highlights/Development Priorities – Alternative D

NPS requires that all units of the National Park System identify development priorities via a strategic planning process. Upon final approval of the GMP, the National Area would initiate an update of its Strategic Plan.

Highlights/Developed Facility Sites – Alternative D

Existing sites have been considered in terms of continued use with no significant change, some level of rehabilitation, expansion, or removal. Generally, existing sites were reconfirmed and, for many, some level of work, or improvement, identified for them. The notable exception to this are the new sites that are proposed in the southwest portion of the National Area where NPS has been actively acquiring land in recent years, such as the Darrow Ridge and Tar Kiln Ridge areas, and where there are currently no designated facilities.

There are no significant changes identified for the First Order type development zones. Bandy Creek, Blue Heron, and the Headquarters area are considered essentially built out, although the management zones allow

some changes or additions. For example, a fire facility is in the process of being constructed in the Headquarters Area, and a facility for museum collection storage is needed. Some of the existing office space is located in houses NPS acquired when it purchased the underlying land. These aging structures are not fully suitable for office use over the long term and are nearing the time for replacement. Improvements would always be needed to these three sites, but no deviations in management direction are foreseen.

A number of Second Order type developments are identified for improvement and two for new development. Two additional potential Second Order developments are identified, although these are not included in the preferred alternative. The new sites are mostly small Access type areas (essentially trailheads) and mainly in the southwest.

The maps following the road and trail highlights discussion show the location and category type for these sites. Descriptive text accompanies the maps.

Highlights/Roads and Trails – Alternative D

The following discussion highlights notable characteristics of the proposed official road and trail system. Maps and itemized text follow this discussion and provide information on individual development sites and road and trail alternatives.

In developing the proposed official road and trail system, NPS evaluated all currently designated, official roads and trails, plus all undesignated, unofficial roads and trails that are receiving any significant amount of use or have received significant use in the recent past. Field surveys, geographic information system data, the combined knowledge of National Area staff, and extensive public input contributed to the large number of roads and trails considered.

As a part of the planning process, the public was requested to provide comments on the characteristics of a "good" road and trail system. In addition to the general public, representatives of the various user groups were convened to have a focused discussion on this subject. The summarized results of these latter discussions are included in the appendix. All comments received were evaluated by NPS and have been further distilled into the following general goals.

- *System elements, i.e., individual roads and trails, should have a purpose sufficient to justify a continued expenditure of limited management resources.*
- *They should provide high-quality, enjoyable, and meaningful visitor experiences to appropriate user types and offer choices in terms of skill levels, remoteness, and solitude.*
- *They should lie lightly on the landscape, i.e., be environmentally friendly and avoid or be specifically designed to minimally affect sensitive resources.*
- *The system should be coordinated with outside interests to provide mutually beneficial linkages.*
- *The system should be sustainable, i.e., the resource base, visitor use, and management of the system should be kept in balance to prevent degradation of resources, the visitor experience, and also management capabilities.*
- *System elements must be consistent with applicable laws, regulations, and NPS policy.*

Each of these generally stated goals is supported by numerous specifics from user input, which have also been used to guide selection of a variety of proposed system elements.

Establishment of official road and trail system

This plan would establish for the first time an official road and trail system for the National Area. It is important to note that under the proposed plan, road and trail use would only be allowed on the official system as identified and described in Alternative D (the Preferred Alternative). All trails not expressly included as part of the official system would be designated as "administratively closed." In addition, public use of a particular road or trail would be limited to the designated use set forth in Alternative D. Only foot travel, which would be

permitted anywhere, would not be restricted to designated routes. Thus, foot travel would be allowed on both designated trails and off-trail so long as no adverse impacts to resources were occurring. (Note: foot travel would be prohibited on administratively closed trails that are undergoing active restoration/rehabilitation.)

Oil and gas access roads are specifically and separately regulated. Most oil and gas access routes, i.e., those routes not significantly used by the general public, have been excluded from this plan (see below).

Portions of the official system may, from time to time, be unavailable for use as determined necessary by National Area management for visitor safety, resource protection, or maintenance. Any future changes in the official system would have to be evaluated and justified in terms of their relationship to the system as included in this plan. These changes would also follow established planning and compliance procedures. If future conditions indicate a change is needed, the implementation effort must identify the effects of the change on resources and users and determine the proper NEPA pathway for compliance documentation.

With road and trail use occurring only on the designated system, other routes used in the past would be closed, would not be maintained, and re-vegetation with native plants would be encouraged. Maintenance would therefore be allowed to focus on an "official" system and become more effective. Those other routes not on the official system would be monitored for erosion as needed and appropriate actions taken to correct problems. Where necessary to protect resources, former trail segments would be actively rehabilitated by the NPS and/or park volunteers.

Oil and gas roads

Since the National Area legislation provides for continued mineral development on the plateau, or adjacent area, according to the limitations contained in that legislation, certain access roads have been constructed by the operators to well sites and their associated necessary facilities. Oil and gas rights and responsibilities are complex and regulated by both the states and the federal government. Management of roads and trails must consider oil and gas rights. Existing federal regulations provide a process whereby NPS evaluates these operations and can require modifications if needed to achieve the purposes of the National Area.

Currently, many oil and gas access routes are being used as routes by off-highway vehicles and horses where the public has access. This use is not always suitable because of safety, maintenance and resource issues. As noted above, oil and gas roads are allowed in the National Area, outside the gorge, for mineral owners and oil and gas operators to access oil and gas sites. Oil and gas sites include wells, pipelines and tank batteries where private minerals below the government owned surface are extracted, collected or stored. Management of these access roads and oil and gas sites would be specifically addressed in oil and gas plans of operations and a Big South Fork NRRA oil and gas management plan that would be developed. The recreational routes proposed in the plan that also are used by oil and gas operators have been identified as suitable for public use. Use and maintenance of these roads would be addressed through discussions with the oil and gas operators to insure an equitable cooperative management strategy. Oil and gas well access roads, other than those specifically designated for public use in the official roads and trails system, would not be open for recreational use.

Use designations

Use designations would be continued to permit specific user types to carefully plan an outing according to their objectives. Some users may wish to avoid other user types as much as possible, while others may not find certain types of use sharing a concern. In any case, by referring to the use designations, visitors would be able to plan a trip that best suits their wishes. For example, hikers could locate areas or corridors where there is the highest potential for solitude and/or the least potential for sharing trails with certain other use types.

Noise controls

The visitor experience would be enhanced in other ways. For example, controlling noise impacts would include the use of stock mufflers on all vehicles used in the National Area. Noise management in developed

areas is currently regulated and would remain so. The visitor would play an important part in planning for an enhanced experience by visiting when possible during times of reduced use, seasonally and/or during weekdays.

Horse/foot trails

Some horse trails are identified where bike use would not be allowed. In public discussions, some horseback riders expressed a desire for trails where only other equestrians and hikers would be encountered. To make such an experience available in the National Area, it was concluded that some horse trails should be free of all other uses but foot travel. The horse trails so identified are Cotton Patch Loop, Pilot-Wines Loop, most of North White Oak Loop, a portion of Jack's Ridge Loop, the Bandy Stables – Katie Trail Connector, the Station Camp Horse Camp Connector, and the proposed new designations of Yellow Cliff Trail, Salt Pine Trail, and Darrow Ridge Trail.

Bicycle use

All trails proposed for bicycle use have been determined consistent with the protection of the National Area's natural, scenic and esthetic values, safety considerations and management objectives, and would not disturb wildlife or National Area resources.

Bicycle use would be designated on the currently-used bicycle trails with a new extension proposed to one of the trails. In addition, bicycles would share some of the lesser-used hiking trails on the west side of the river in the Rock Creek, Chestnut Ridge, and Cat Ridge areas.

Time-sharing of trails

In addition to shared use on many trails, time-sharing is another element included in the plan, in an experimental manner, to provide increased opportunities without increasing trail mileage. This management tool must be applied carefully in order to maintain a high degree of the desired experience of the different types of users. User types and applicable trail standards must be considered. Also, user education and enforcement would be considerations in application and evaluation. The plan would initially combine hiking and mountain biking on an experimental basis on Grand Gap Loop. The time-sharing arrangement being considered is for biking to occur on weekdays only. This trail was selected because of its scenic quality and because it was built to a hiking standard; as a result, the plan would allow bike use to be evaluated on a true hiking trail. Some places would require bikers to carry their bikes and they would be so instructed. This tool could be applied elsewhere at different locations or for different user groups as opportunities or needs arise.

If the Monday-Friday "experiment" works on Grand Gap Loop, consideration would be given to allowing bikes on the following two trails, also on a Monday-Friday basis:

- John Muir Trail (development map 7: trails 10 and JMT-20). This would allow a cycling loop that includes Alfred Smith Rd. -> John Muir Tr. -> Duncan Hollow Rd.

- Angel Falls Trail (development map 7, trail 3; development map 8, trail 1).

Multiple-use trails

This plan continues the trail type, "multiple-use trail." This trail type allows various designated uses and is typically known in the National Area for allowing vehicles and horses on the same route. Significantly, it is a violation of regulations for horseback riding to occur on park roads. The plan addresses this issue by trail relocations and also by re-designating certain routes as multiple-use trails and maintaining them to trail, rather than road, standards.

The plan allows motor vehicles that are licensed and registered to be driven on multiple-use trails. The plan also allows ATV use on multiple-use trails by hunters actively hunting during big game season only (see

discussion following). (Multiple-use trails would be closed to ATVs at all other times of the year.) Design and maintenance standards would be such that vehicles can usually only negotiate these routes at slow speeds. Where necessary, National Area staff would install speed reduction devices such as speed bumps and warning signs to ensure slow vehicular travel.

Consideration was given to relocating trail uses off of roads in order to enhance the safety and enjoyment of trail users. The potential for this was significant, but the construction of new trails to accomplish this in all cases was not considered appropriate unless there were overriding concerns in terms of visitor experience, including safety. Cost, increased maintenance efforts, and further disturbance of the natural environment were factors.

Off-highway vehicle use

Off-highway vehicle (OHV) use in the National Area currently occurs in many areas and for different reasons. Most users are from the local area and use these vehicles, primarily all-terrain vehicles (ATV), for general recreation and hunting. Users also arrive from outside the local area looking for riding opportunities. These vehicles are capable of heroic riding experiences, and, unfortunately, some users test themselves and their machines in ways that damage resources and disturb other users. This concern, multiplied many times over in many parts of the country, led to the issuance of Executive Orders 11644 and 11989. Signed by the President in 1972 and 1977, respectively, these orders require all federal agencies to regulate off-road, or off-highway, vehicles in order to minimize both damage to resources and conflicts with other users.

For the purposes of this document, the following definitions apply:

Off-highway vehicle (OHV): *An umbrella term that includes the class of motorized vehicles that are designed for cross-country travel or operation on routes considered inadequate for the typical highway vehicle. These include all-terrain vehicles, four-wheel drive vehicles, "rail cars," and motorcycles commonly referred to as "dirt bikes".*

All-terrain vehicle (ATV): *Licensed or unlicensed (currently ineligible for licensing) three- or four-wheeled motorized vehicle having a seat/saddle a rider straddles and uses handlebars to steer.*

Four-wheel drives: *Licensed motor vehicle capable of four-wheel drive, in which the operator and any passengers sit within.*

Rail car: *Licensed motorized vehicle of open tubular construction, in which the operator and any passengers sit within. Unlicensed rail cars are not permitted within the National Area.*

Dirt bike: *Licensed two-wheeled motor vehicle. Unlicensed dirt bikes are not permitted within the National Area.*

ATVs/Hunting

Clearly, there are responsible users and uses of OHVs. This plan's preferred alternative attempts to provide for these in two ways. First, there are the hunters. Hunting is a legitimate use, as provided for in the National Area legislation. Many hunters, especially when hunting deer or wild boar, have used vehicles to get to desirable areas and for hauling game out. Under the Preferred Alternative, hunters would be able to use ATVs on multiple-use trails while actively hunting, during big game season only. Multiple-use trails would be closed to ATVs at all other times of the year. Big game season is defined for this purpose as the legal season for deer and wild boar only (in the future, elk and bear may be available for hunting; these species would also be classified as "big game"). Turkey season would not be included. The reason for this route designation is to permit the use of vehicles for the hauling out of heavy animals. Hunters using ATVs on multiple-use trails during big game season would be required to possess a valid hunting license; they must be hunting big game and be in possession of an appropriate weapon. Hunting other game besides deer and wild boar would continue to be available, but ATVs would only be allowed as described, i.e., on designated multiple-use trails,

during big game season, when the ATV user is engaged in hunting activities (note: it is illegal to hunt from a vehicle). Vehicles would not be allowed off of designated routes to retrieve animals.

Experimental ATV routes

Second, ATV routes for year-round general recreational use could be designated within "planning areas" identified for consideration of such use (reference Zone Map 5). The plan includes two such planning areas in the Darrow Ridge area that would provide opportunity to design an experimental prototype system. Any system would not provide for special features specifically considered as "challenges," i.e., boulder fields, water holes, and jumps, which are not natural.

ATVs would not be permitted on any park road or any other trail type (except multiple-use trails during big-game hunting season – see above).

Addition/removal of specified trails

It has been recognized that while the National Area has many miles of trails, there are certain gaps that exist in what could be a more integrated trail system offering a better visitor experience. The plan would fill these gaps, such as a connector linking the networks surrounding Station Camp and Bear Creek horse camps and the completion of the John Muir Trail. Lesser trails have also been considered and would be included, such as a substitute for the Blue Heron Campground Spur foot trail, which currently follows the access road, and an extension off an existing foot trail that would link all the overlooks located near the headquarters complex.

In some cases, existing designated trails may be removed where there are safety or resource issues, or where there is duplication of opportunity. For instance, it may become appropriate to combine the existing two North White Oak Loop crossings of TN 297 into only one crossing.

Road and trail standards

Road and trail standards are a critical part of the plan. For each road and trail, a standard is indicated that supports the designated use(s) and also is consistent with desired resource conditions in the surrounding area, or zone. Guidelines exist for the national park system as a whole, but each unit is expected to adapt the guidelines for its own conditions. Adaptation of the guidelines occurred using the suggestions from user group representatives and National Area personnel. Specific standards cover a variety of uses and purposes. Descriptions of these standards are in the appendix. Included with the standards are illustrative photographs and a typical work plan for trail maintenance.

Standards in the appendix are typically expressed in terms of maximum widths. Trails can and should be narrower in more remote areas and in areas within the Sensitive Resource Protection Zone. Trails located on former roadbeds need not necessarily be maintained to road width. On the other hand, staffing levels would often dictate the amount of vegetation clearing adjacent to trail treads. Where return intervals for maintenance treatments are lengthy, more vegetation would be cleared from trailsides in order to ensure that the trail stays open between treatments. Vegetation management along roads and trails would avoid the encouragement or spreading of exotic species and would be conducted in a manner that acknowledges sensitive plant communities and species of management concern (e.g., state or federally listed species).

In addition to specific standards, the planning and design of roads and trails needs to take into account their effects on resources, especially those highly sensitive to human disturbance. The combination of the zone management prescription, the use designation, and the appropriate standard would provide the design guidance for a specific road or trail in a particular location. General policy includes complete physical avoidance of sensitive resources where reasonable alternatives are available. Additional factors such as sight and sound could increase the distance a road or trail may need to be routed away from or around some resource. Specific distances would depend on the type of resource and the type of use(s) and would be considered as resources are monitored and/or during specific project planning, including maintenance. As a general rule, a 100 to 200-foot buffer would be considered, with any access within that distance being subject

to extra evaluation measures. The National Area's automated database would provide the first level of analysis of any issues of proximity to sensitive resources.

As a general rule, old roadbeds are unsuitable locations for trails. All new trails would conform to the trail standards in this plan to the maximum extent practicable, including the standards for slope and drainage configurations. The long-term goal for trails currently existing on old roadbeds where resource damage is occurring is to relocate and rebuild the trail at an appropriate grade with the necessary drainage characteristics. Where relocation is not feasible and resource damage is occurring, closure of trails is an option.

Use capacity

In the absence of data on the condition and use—and the relationship between the two—for each road or trail, the assignment of a pre-determined use capacity (number) on specific routes has not been attempted. Coupled with possible opportunities for changes with additional planning and design, capacity levels have been addressed in a more general manner. The basic consideration has been to identify desired conditions for resources and a desired visitor experience for each management zone type and a management prescription to achieve and maintain those goals, including practical indicators and standards. On-going research, monitoring, and adaptively managing in response to findings is considered the only practical way to identify and address capacity type issues. Generally, some routes leading to specific attractions may be in jeopardy of exceeding acceptable capacity levels, either for the resource or visitor experience, or both. Prior to limiting the number of visitors at a certain attraction, specific evaluation of options including other planning/design solutions could yield ways to continue unrestricted numbers to visit an attraction and still meet identified standards. When conditions require, however, National Area management can impose current federal regulations to limit or otherwise regulate use, either permanently or temporarily. Specific studies would be conducted to address significant issues.

Monitoring road and trail conditions

Monitoring the condition and use of the road and trail system is crucial to achieving visitor experience and resource objectives. The plan would include a significant increase in monitoring as a management responsibility. Because of the continued likelihood of limited funds, this effort would necessitate a creative approach involving not only National Area personnel but also others interested in the area's use and well being. Achieving and maintaining the desired conditions of the various zones would require the cooperative involvement of partners in a variety of efforts including not only monitoring but also trail building and maintenance. The Big South Fork Bicycle Club continues to be an outstanding example of an able and willing partner. Others from the various user groups have stepped forward as well.

Trail hubs

There are areas where trails naturally converge, such as near trailheads, at water crossings, and at breaks in the cliffs. These areas deserve special consideration. Trail density can be higher, and use is usually more concentrated. Areas having multiple converging trails are frequently referred to as "hubs," with the radiating trails being the spokes. The area immediately west of the Station Camp river crossing is one such location. Where these concentrations are appropriate, special management considerations may include some deviation in standards. These could include increased trail widths, increased surface hardening, or more signs, in addition to a higher level of monitoring for resource impacts and visitor satisfaction. They could also include greater notification of changing experience conditions.

Stream crossings

Trail crossings of the rivers and streams would get increased scrutiny. Trail crossings exist where the water is typically shallow. These areas are sometimes important habitat for certain aquatic species, perhaps most significantly, endangered mussels. (See policy statement on horses and mussels in the appendix.) Agreement with the U.S. Fish and Wildlife Service has been reached for interim treatment, i.e., flagged

corridors, at certain existing crossings to minimize impacts on mussels from trail users. As mentioned in the discussion of resource management, studies are planned, along with detailed environmental compliance, to further investigate how best to provide crossings where they are needed.

Use of O&W roadbed

Under the plan, the route of the old O&W railroad would provide continued passenger vehicle access to the O&W bridge from the east. The route would be improved to the extent of providing safe passage. Within its jurisdiction, Scott County has acquired and maintained a deeded interest in the former O&W right-of-way. This interest is coupled with an implied dedicated easement in favor of the public to travel on the right-of-way from the eastern boundary of the National Area to the point it intersects North White Oak Creek. Coordination with Scott County on the improvement would be essential to achieve desired use and resource conditions.

The O&W route west of the bridge (determined abandoned in Fentress County) to trail connections near the western boundary of the National Area would be a trail designated for foot, horse, and bike use. This is consistent with previous studies. The route would be brought to a standard suitable for the intended trail uses.

Trail connections to adjacent public lands

The Preferred Alternative provides for additional trail connections to areas outside the boundary in several locations. Currently, there are numerous designated trails that cross the National Area boundary to link with trails provided by other public agencies, i.e., Daniel Boone National Forest, Pickett State Park and Forest, and Scott State Forest. However, additional connections are needed to optimize opportunities in the National Area.

A need exists for horse trail connections between the Daniel Boone National Forest and the National Area. Specifically, connections are desirable between Barren Fork Horse Camp and Bell Farm on the National Forest and Bear Creek Horse Camp and other horse trails in the National Area. Under the Preferred Alternative, provision is made for horses using the Sheltowee Trace west of the river by connecting with National Area trails through Ledbetter Trailhead and proceeding eastward to Bear Creek Horse Camp or westward to Peters Mountain and Bell Farm. This eliminates the need for the Trace's current routing on Laurel Ridge Road. Future connections from the east, i.e., the Forest Service's Barren Fork Horse Camp, would be coordinated with Forest Service planning. Current thinking involves using Negro Creek Trail and the portion of the Trace south to KY 92 and possibly the K&T Bridge.

The plan calls for completion of the John Muir Trail. Major new sections are proposed for the Clear Fork corridor and in the Hurricane Ridge – Big Woods area. This would provide a continuous hiking, or backpacking, experience through the National Area and tying to trails outside. For example, the John Muir Trail would be extended all the way to the south end of the National Area at Peter's Ford. This would allow for possible future connections to the state's Cumberland Trail.

Access to trail system from adjacent private lands

In some areas, no official route or other formal provision exists for trails entering the Area from privately owned lands outside the boundary. These trails were reviewed for possible inclusion in the proposed designated system. Major considerations were a high or growing user population near the National Area, the potential for a dedicated trailhead open to use by the general public (with vehicle access), compatibility with both the proposed system and National Area objectives, non-duplication of proposed system elements, and public interest.

At some locations, unofficial trails cross the boundary providing what amounts to private access to individual adjacent landowners. This practice is not allowed under the Preferred Alternative. A proposed solution is for landowners to cooperate in providing each other trail access across their lands to a central point along the boundary where a public trailhead would be provided. A good example of this already exists in the Spruce

Creek subdivision where a collector trail on private lands enters the boundary at the Cumberland Valley Trailhead, just off TN 297. Connections with outside trails or trailheads can provide a larger, regional system available to users.

Competitive events

Competitive events using the National Area's trail system are a popular and appropriate use within specific limits. Special Use Permits are necessary to allow management to consider the nature and effects of the events and to control their conduct. Generally, events involving horseback riding and bicycles would continue to be allowed, limited to routes designated for their respective uses. Foot travel events would continue to be allowed on and off designated routes. Orienteering, or cross-country/map-and-compass events, is gaining in popularity. Any proposed off-trail events would be especially reviewed to avoid potential resource conflicts. Motor vehicle events would continue to be disallowed. Because competitive events typically involve repeated impacts by participants over a short period of time, routing would be given a high level of review. For this reason, special consideration would be given to the Big South Fork River during low flow periods in order to provide extra protection to endangered mussels.

Trail mileage

An analysis was undertaken to compare trail mileage among the several alternatives. The following table displays on a National Area-wide basis mileage of various trail types *under the different alternatives. In using the table, it should be kept in mind that most user groups are allowed to use more than one trail type. For example, horseback riders may use both horse trails and multiple-use trails. As a result, the mileage of hiking, biking, and horse trails as set forth in the table is less than the overall trail mileage available to each of these user groups. (Note: not all of the trail miles open to a particular user group may actually be optimal for that group's activities.)*

Specific discussion of what uses are allowed on which trail types is provided in the section below under Individual Proposals. Again, D is the NPS Preferred Alternative; Alternative C represents the "existing condition," or no-action alternative (Alternative C generally represents the trail system as used by park visitors in 2003); A and B are the alternatives carried over from the February 2000 draft.

TRAIL TYPE	ALTERNATIVE			
	A	B	C (No Action)	D (Preferred)
	MILES			
Hiking	133	146	129	141
Horse	169	187	156	182
Multiple Use	49	50	50	49
Mountain Bike	22	24	8	24
TOTAL MILES	374	407	343	396

State and County Roads

Large vehicles, including commercial 18-wheelers and certain recreational vehicles, use TN 297 through the center of the National Area. Use of this steep winding route through the gorge is not desirable and can be unsafe for visitors wishing to experience the scenic serenity of this main access road into the National Area. The plan includes evaluating a prohibition on large vehicles using TN 297.

A number of county roads exist in the National Area, mostly short dead-end routes. The plan would continue existing cooperation with the counties. Maps of county roads are included in the appendix.

Boating

River access for boating is provided by roads and some trails. No change is proposed in the existing legislatively authorized access points. Access would be enhanced by upgrading certain trails and development/access sites, but no additional access points are proposed. Trail access to overlooks on the gorge rim is a concern from the standpoint of potential effects on boater experiences. When not having to concentrate on maneuvering through swift water and rapids, boaters, like others, enjoy the serenity of natural surroundings. The management prescription for cliff edges would address this concern. Trails paralleling the river are also a concern in this regard, and trail proposals are included only where believed appropriate, considering the need to "share" the river corridor. Boater camping along the rivers, apart from development sites included in this plan, would be addressed in a backcountry management plan. Portage trails around rapids are used by boaters; however, their routes and use are subject to change due to floods. These routes are not specifically identified in this plan. Current conditions would continue to be available from National Area personnel.

Individual Proposals – Alternative D

Using the development maps

The following series of maps and accompanying itemized text discussions present the preferred alternative (plan) for development, including the road and trail system. The existing situation is referenced to help identify differences. Graphic limitations prevent a fully detailed illustration of all the plan's characteristics.

Consequently, the text accompanying each map must also be referenced in order to gain the best understanding of the plan.

Specific roads or trails of reader interest can be found in two ways. The reader may first refer to the index map following this discussion that shows the National Area and how it is divided up for map coverage. There are eleven maps that, together, cover the entire National Area. Next, find the map that covers the area of interest. Only certain names are included on these maps for reference purposes. The names of all roads, trails, and development sites appear in alphabetical order in the text following that map and are linked to the map by number. A second way is to refer to the Roads and Trails Index to Maps located in the appendix. This provides a comprehensive listing, in alphabetical order, of all the roads and trails considered. It also indicates the particular map or maps on which the route is located and the map numbers assigned. Routes may be listed in segments, indicating the route is either discussed or treated in some manner in segments or data were collected and stored by segment.

Most roads and trails discussed already exist, and the various map lines simply represent their existing alignments. Other trails discussed do not exist at present, and the map lines only indicate approximate locations. Specific alignments of any new trails would be the subject of later planning and compliance evaluation. The text items also show how the specific development sites and roads and trails would relate to Alternatives A and B.

It is important to note that text references in the Description *to current use include all known uses, legal and illegal. For instance, if vehicle use is occurring where it is inappropriate, that use is still shown as a current use. The uses indicated for the preferred alternative, or any other alternative, would only include those that are legal and appropriate.*

The following series of eleven maps depict several types of routes and their allowed use types:

- *Hiking Trails (hikers only)*
- *Mountain Bike Trails (mountain bikes and hikers)*
- *Horse Trails (horses, hikers, and mountain bikes – bikes on most horse trails)*
- *Multiple-Use Trails (4WD, horses, mountain bikes, hikers, and, during big game season while actively hunting, ATVs. 2WD where route allows.)*
- *Less-than-2-Lane designated Roads, gravel or dirt (horses and ATVs are not allowed on designated roads by law and regulation)*
- *2-Lane Roads, gravel (horses and ATVs not allowed as indicated above)*
- *2-Lane Roads, paved (horses and ATVs not allowed as indicated above)*

Methods of travel would be allowed, as designated, on the different types of routes as follows:

- *By foot – on all designated trails and off-trail, except in locations that have been closed per the Superintendent's compendium.*
- *Horse – on all designated horse trails and multiple-use trails*
- *Bicycle – on all designated bike trails; horse trails, except where designated for horse use only; multiple-use trails; and on all public routes used by motor vehicles*
- *ATV (licensed or unlicensed) – only on specifically designated recreational ATV routes within the ATV planning areas, and multiple-use trails during big game season while actively hunting (other unlicensed vehicles prohibited throughout the National Area)*
- *Licensed 2- or 4-wheel drive vehicle, licensed rail car, or licensed dirt bike – on public roads and multiple-use trails*

In the text comments about each site, road, and trail, three consistent terms are used to explain their status. They are: "designated," where they are currently officially recognized; "existing, undesignated," where they are used but only informally; and "proposed new," where they do not currently exist and are now being considered.

Two additional terms are used in the text items consistently. They are: "site plan" and "site review." "Site plan" is used in the cases of proposed new facilities to indicate a more detailed project planning effort since previously undisturbed land would generally be involved. "Site review" is used in the cases where existing, undesignated routes are proposed for designation. This review at a minimum would entail a field review and use of the NPS' environmental screening form to determine the extent of environmental compliance documentation needed. Either the site plan or site review evaluation could result in a change in the action proposed in this plan.

Programmatic treatment of certain trail, trailhead, and road projects

This document is considered programmatic in that it includes an analysis of the environmental consequences of typical new trails and trailheads and existing site, road, and trail rehabilitation, maintenance, use, and management. As such, this document would serve as the environmental documentation for individual trail, trailhead, and road projects that conform to the parameters discussed herein.

Elements of individual proposals would include the following:

- *Projects could involve* building *trails in previously undisturbed areas. (No new roads are proposed.) These trails could range in tread width from 18 inches (minimum for foot trail) to eight feet (maximum for horse trail). The appendix includes dimensions for the various types of trails proposed for the National Area. Activities would typically include surveying and flagging the route for the best possible alignment, clearing trees and brush according to trail standards from the corridor using chainsaws and brush axes, removing stumps by grubbing, and excavating where needed for tread material installation. Grade dips, water bars, and cross drains would be placed where appropriate to facilitate drainage; geo-tech fabric or webbing would be placed as needed at stream crossings; and turnpikes or puncheons used where needed in wet areas. This would include the use of equipment suited to the desired standard. This means that trails from 18 to 24 inches would typically be hand dug using tools such as picks and shovels, pulaskis, and Mcleod rakes. (Where appropriate, heavier machines can be used.) Trails from two feet to six feet would be built using the previous tools, plus tracked wheelbarrows, "Dingos" (mechanical auger), and ATV-type dump vehicles. Trails wider than six feet would be built using the any of the above, plus a small bulldozer, where appropriate. A typical trailhead (Access site) would range in configuration from 4 to 15 vehicles—average assumed to be 8 vehicles—in new sites or additions to existing sites. The location of a trailhead is assumed to be immediately adjacent to a road but could include a very short—less than 50 feet—access road connecting the road and parking area. Activities involved in implementation would typically include those used for wider trails. The surface would typically be graveled and have cement or log wheelstops. An informational sign would be provided.*

- *Projects could involve* rehabilitation *of all or major portions of an existing trail, trailhead, or road. Such work would include any type of significant work required to bring an existing route to a desired standard. Work could include many of the elements of installing a new facility except the work would be concentrated on the existing road or trail. Some re-routing may be necessary.*

- *Routine* maintenance *projects would involve clearing, restoring clearances, cleaning and repairing drainage structures, and repairing surfaces, bridges, other structures, and signs. (See annual work plan in appendix for additional detail.)*

- Protection *and environmental compliance measures for different project phases would include:*

  - ✓ Pre-project*: surveys and field investigations to identify possible involvement with resources identified in the sensitive resource zone discussion, especially archeological surveys and field checks for threatened or endangered species, including coordination with agencies having jurisdiction. Surveys would also identify any resources which, if damaged or destroyed, could result in impairment of National Area resources or values. Results of the surveys and other available information would be used by NPS personnel to complete appropriate environmental screening as prescribed by NPS policy*

to determine whether any potential impacts could occur that have not been identified and analyzed in this document. If any such impacts are identified, a site-specific environmental compliance process would be completed prior to commencement of work.

Any adverse impacts identified in connection with a project would be avoided if practical or minimized by altering the route or design standard. Projects that could result in resource impairment would not be approved.

- ✓ During project*: best management practices (BMP) for erosion control, including silt fencing such as plastic, hay bales, and brush barriers; sediment traps and check dams; mulching and replanting disturbed areas.*

- ✓ Post-project*: monitoring according to indicators and standards identified in the zone discussions or more refined techniques and other physical condition and visitor experience assessment methods.*

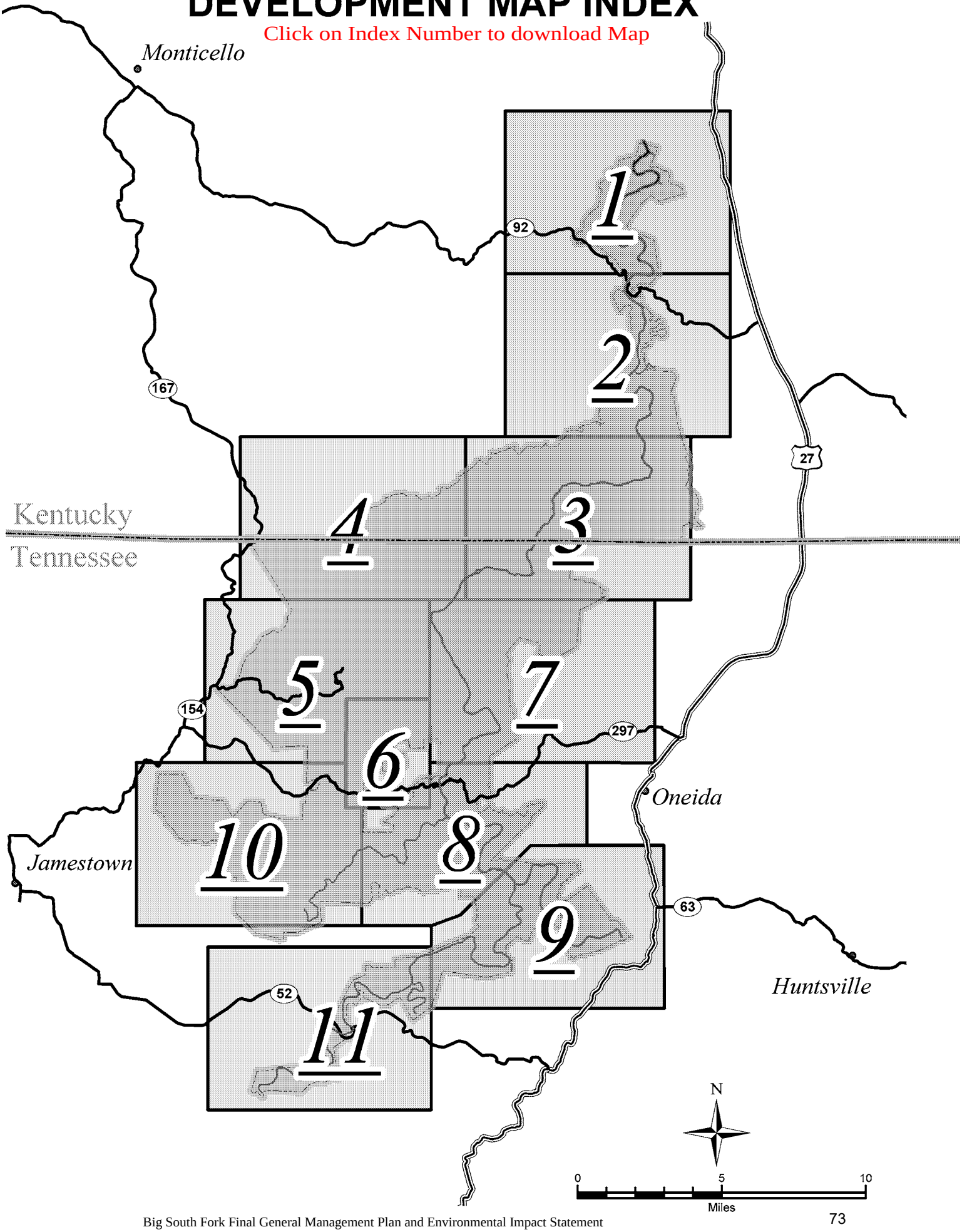
- Use *of the trails and roads, according to use designations referenced herein.*

- Adaptive management*, according to monitoring feedback. This could include managing use differently by redirecting, reducing, or otherwise changing an existing use pattern. It could also include changing the physical design, changing work methods, or changing maintenance parameters.*

A series of eleven maps, each with accompanying text, follows. In the event of a discrepancy between a particular map and the accompanying text, the text is controlling.

DEVELOPMENT MAP INDEX

Click on Index Number to download Map



Other Alternatives Considered

The zone applications shown in the maps of Alternative D are based on available resource and visitor use information and public comments received on the alternatives in the Supplemental Draft GMP*, the February 2000 draft, and in focus group discussions. Significantly different types and applications of zones have not surfaced.*

In the case of proposed development sites and roads and trails, consideration has been given to all comments received on the February 2000 draft, the subsequent planning for roads and trails, and comments on the Supplemental Draft GMP*. A number of specific suggestions were made concerning certain roads or trails that are not reflected in this document. Some of these suggestions were left out because another idea surfaced that was considered a reasonable substitute. Some ideas were not compatible with the required management framework, as discussed in chapter two. An alternative that eliminates either the Big Island or Station Camp river crossings, or both, was considered but dismissed since the proposal includes the specific study of trail/river crossings, which would yield specific guidance. Bridges are an option to be evaluated. Additional formal lodging within the National Area, previously referenced in the Army Corps of Engineers' master plan, has been reconfirmed as unneeded and, in fact, undesirable in view of actions being taken to provide these and other facilities in the surrounding community.*

Environmentally Preferred Alternative

The environmentally preferred alternative is determined by applying criteria set forth in the National Environmental Policy Act (NEPA), as guided by direction from the Council on Environmental Quality (CEQ). The CEQ has stated that the environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in NEPA, Section 101. This includes alternatives that:

- *Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;*
- *Assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;*
- *Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;*
- *Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;*
- *Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and*
- *Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.*

The No-Action Alternative would not, over the long term, provide the required strategic guidance for management that is necessary to safeguard the National Area's resources while providing for visitor use and enjoyment. It would not meet several of the indicated goals.

The NPS has determined that the environmentally preferable alternative is Alternative D (Preferred Alternative) because it surpasses the other action alternatives in realizing the fullest range of national environmental policy goals as stated above. Of all the alternatives, Alternative D contains the most elaborate and focused system of management zones, together with detailed management prescriptions, designed to protect natural and cultural resources and identify desired visitor experiences. Alternative D would a) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations, b) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended

consequences; and c) preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

Cost Considerations and Economic Impacts

With an existing budget of $3.6 million and 51 permanent employees, plus current visitation of approximately 900,000 visits annually, the National Area provides significant economic benefits to the local and regional economy. In fiscal year 2002, the National Area spent $2.9 million for salaries, $75,000 for utilities, and $150,000 for supplies procured in the local area. An additional $650,000 was received for special park projects. Total combined sales for motels and restaurants in the local area was approximately $6.5 million, resulting in personal income of approximately $2.2 million. The value added from National Area operations was calculated to be $3.5 million. In addition, operation and use of the National Area has resulted in approximately 181 jobs being created for local communities. Using output from the Money Generation Model & Money Generation Model II (1992, 1999), it is estimated that the National Area has a total economic benefit for the local area of between $10 and $16 million dollars.

In years to come, the National Area will increasingly be a focus of efforts to promote tourism and related development in the region. As these efforts come to fruition, helped in part by actions called for in the Preferred Alternative, the beneficial impact of the National Area on the local and regional economy will become even more important.

As noted below, an additional $3,900,000 in annual operating funds would be needed to fully implement the Preferred Alternative. If this level of funding were to become available, the increase in annual operating expenditures, combined with higher levels of tourism attributable to the Preferred Alternative, would result in a significant increase in annual economic benefits to the local and regional economy. These continuing benefits would be over and above the one-time benefits associated with actual construction of the facilities called for in the Preferred Alternative.

Costs associated with the facility-related actions, including roads and trails, would be incurred according to specific needs, priorities, and funding availability over the multi-year planning period. The total of these costs associated with Alternative D, the Preferred Alternative, would approximate $5,600,000. Alternative A actions would be approximately $5,010,000. The total cost for Alternative B-associated actions would approximate $6,425,000. Of note is the fact that the no-action alternative, strictly speaking, assumes no actions taken, i.e., no additional costs incurred, its being a "snap shot" of current conditions. Therefore, the costs shown for the three action alternatives, A, B, and D, actually include costs needed to bring many existing, substandard roads and trails to a suitable condition.

A shortfall of $2,200,000 has been identified and requested previously to bring operations to a basic level to meet standards. Upon approval of the general management plan, additional annual operating funds of approximately $1,700,000 would be needed over the planning period to implement the Preferred Alternative. (The total required increase is thus $2,200,000 + $1,700,000 = $3,900,000.) Given current base funding of $3,600,000, the projected base operating budget to fully implement the Preferred Alternative is $7,500,000.

Traditional means of implementation involve funding through congressional appropriations. Additional assistance from partnership programs and volunteer efforts would be encouraged. Greater clarity and understanding of management goals should lead to broadening the opportunity for partnerships and volunteers, and the expansion of the roles and number of partners could result in increased donations of supplies, material, equipment, research, and time to the National Area.

Summary Comparison of Alternatives

The four alternatives considered may be categorized into 1) no changes—or current conditions (Alternative C), 2) broad zoning guidance (Alternatives A and B), and 3) detailed zoning guidance (Alternative D). The No Action alternative aside, the most significant difference between the three action alternatives is the degree of resource and visitor use management guidance provided. Alternative D, the Preferred Alternative, provides

National Area management and the public with the highest degree of information and guidance concerning objectives, management, use, and development.

The following two tables show selected elements of the several alternatives. These tables are intended for use only in conjunction with the text and should not be relied upon apart from these discussions.

ELEMENTS OF THE ALTERNATIVES

Element	No Action Included for comparison purposes only	Alternative A	Alternative B	Alternative D The proposed action and the environmentally preferred alternative
Concept	No formal concept; current management	Rustic and natural; conveniences available in selected areas	Variety of recreation opportunities; allows conveniences in many areas	Preservation and Use according to directed management
Number of Zones	2 “zones” – gorge and plateau, according to legislation	3 general zones	3 general zones	7 specific zones, plus 9 resource-specific sub-zones
Effects of Zones	Specific distinctions between gorge and “adjacent area”	Gorge distinctions plus general guidance for 3 zone types	Gorge distinctions plus general guidance for 3 zone types	Gorge distinctions plus specific guidance for 15 zone types
Gorge Restrictions and River Accesses	Eleven, per legislation	No change	No change	No change
Visitor Facility Development (general)	Per legislation	Per legislation; plus allowed in general zones according to management prescription	Per legislation; plus allowed in general zones according to management prescription	Per legislation; plus described by specific development zones; reaffirms current overall development scheme; no significant change except increase in southwest
Roads and Trails (general)	Per legislation, and addressed on case-by-case basis	Per legislation, and addressed in zones and individually on system basis	Per legislation, and addressed in zones and individually on system basis	Per legislation, and addressed in zones and individually on system basis
Resource Protection (general)	Per legislation, and addressed on individual project basis	Per legislation, and addressed generally by 3 zones	Per legislation, and addressed generally by 3 zones	Per legislation, and addressed by all zones, including 9 resource-specific zones; plus monitoring guidance
Oil and Gas Development	Per legislation and federal/state law	Per legislation and federal/state law; additional minerals management planning; zone guidance	Per legislation and federal/state law; additional minerals management planning; zone guidance	Per legislation and federal/state law; additional minerals management planning; zone guidance
Horse trail opportunity	Partially defined system; existing opportunity using informal and designated trails	Defined system; designated trails increased; use limited to designated trails; relocations from	Defined system; designated trails increased; use limited to designated trails; relocations from	Defined system; designated trails increased; use limited to designated trails; relocations from

Element	No Action Included for comparison purposes only	Alternative A	Alternative B	Alternative D The proposed action and the environmentally preferred alternative
		roads; fill gaps	roads; fill gaps	roads; fill gaps
Hiking trail opportunity	Partially defined system, plus "hike anywhere" policy	Defined system, plus "hike anywhere" policy; fill gaps including completed JMT	Defined system, plus "hike anywhere" policy; fill gaps including completed JMT	Defined system, plus "hike anywhere" policy; fill gaps including completed JMT
Mountain bike trail opportunity	Existing opportunity on designated trails, roads, multiple-use and horse trails	Increased opportunity; Time-share experiment on 1 hiking trail; excluded from 7 horse trails	Increased opportunity: Time-share experiment on 1 hiking trail; excluded from 7 horse trails	Increased opportunity; Time-share experiment on 1 hiking trail; excluded from 7 horse trails
All-terrain vehicle (ATV) opportunity	Existing opportunity, except reduction due to continuing removal from gorge and public roads	Only on designated routes while hunting (big game season only), and on proposed ATV route	Only on designated routes while hunting (big game season only), and on proposed ATV route	Only on designated routes while hunting (big game season only), and in selected planning areas
Hunting opportunity	Existing opportunity per legislation and state and National Area regulations	Existing opportunity per legislation and state and National Area regulations; ATV access on multiple-use trails during big game season	Existing opportunity per legislation and state and National Area regulations; ATV access on multiple-use trails during big game season	Existing opportunity per legislation and state and National Area regulations; ATV access on multiple-use trails during big game season

Environmental Consequences

Consequences On…	No-Action Alternative C	Preferred Alternative D	Alternative A	Alternative B
Natural Resources				
Geology, Physiography, and Soils	Resources threatened by uses inside & outside National Area. Individual projects provide benefits inside the National Area and include specific consideration of impacts. No additional development (status quo). Management and use addressed by legislation only.	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would be *negligible to moderate* at individual project sites, with mitigation and monitoring. Development and use limits addressed by legislation and *seven* management zones, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *less* area affected. Development and use limits addressed by legislation and *three* management units, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *more* area affected. Development and use limits are same as "A".
Water Quality	Resources threatened by uses inside & outside National Area. Individual projects provide benefits inside the National Area and include specific consideration of impacts. No additional development (status quo). Management and use addressed by	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would be *negligible to minor* in the vicinity of individual project sites, with mitigation and monitoring.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but

Consequences On...	No-Action Alternative C	Preferred Alternative D	Alternative A	Alternative B
	legislation only.	Development and use limits addressed by legislation and *seven* management zones, with prescriptions.	slightly *less* area affected. Development and use-limits addressed by legislation and *three* management units, with prescriptions.	slightly *more* area affected. Development and use-limits are same as "A".
Floodplains	No additional development in streamside areas (status quo).	Very limited development and rehabilitation of visitor facilities in existing streamside areas. Impacts expected to be *negligible*.	Impacts from development essentially the same as "Preferred Alternative." Impacts expected to be *negligible*.	Impacts from development essentially the same as "Preferred Alternative." Impacts expected to be *negligible*.
Wetlands	No additional development (status quo).	Very limited development and rehabilitation of visitor facilities in wetland areas. Impacts *negligible*.	Very limited development and rehabilitation of visitor facilities in wetland areas. Impacts *negligible*.	Very limited development and rehabilitation of visitor facilities in wetland areas. Impacts *negligible*.
Air Quality	Resources threatened by uses inside & outside National Area. Individual projects provide benefits inside the National Area and include specific consideration of impacts. No additional development (status quo). Management and use addressed by legislation only.	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would be *negligible to minor* throughout the National Area, with mitigation and monitoring. Development and use limits addressed by legislation and *seven* management zones, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *less* area affected. Development and use limits addressed by legislation and *three* management	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *more* area affected. Development and use limits are same as "A".

Consequences On…	No-Action Alternative C	Preferred Alternative D	Alternative A	Alternative B
			units, with prescriptions.	
Vegetation	Resources threatened by uses inside & outside National Area. Individual projects provide benefits inside the National Area and include specific consideration of impacts. No additional development (status quo). Management and use addressed by legislation only.	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would be *minor to moderate* in the vicinity of facilities and individual project sites, with mitigation and monitoring. Development and use limits addressed by legislation and *seven* management zones, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *less* area affected. Development and use limits addressed by legislation and *three* management units, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *more* area affected. Development and use limits are same as "A".
Terrestrial and Aquatic Life	Resources threatened by uses inside & outside National Area. Individual projects provide benefits inside the National Area and include specific consideration of impacts. No additional development (status quo). Management and use addressed by legislation only.	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would be *negligible to minor* in the vicinity of facilities and individual project sites, with mitigation and monitoring. Development and use limits addressed by	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *less* area affected. Development and use limits	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *more* area affected. Development and use limits

Consequences On…	No-Action Alternative C	Preferred Alternative D	Alternative A	Alternative B
		legislation and *seven* management zones, with prescriptions.	addressed by legislation and *three* management units, with prescriptions.	are same as "A".
Special Status Species	Resources threatened by uses inside & outside National Area. Individual projects provide benefits inside the National Area and include specific consideration of impacts. However, over time some species could be adversely affected. No additional development (status quo). Management and use addressed by legislation only.	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would *not adversely affect* any special status species, with appropriate mitigation and monitoring. Development and use limits addressed by legislation and sev*en* management zones, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *less* area affected. Development and use limits addressed by legislation and *three* management units, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *more* area affected. Development and use limits are same as "A".
Cultural Resources				
Archeological Resources	Resources threatened. Individual projects provide benefits inside the National Area and include specific consideration of impacts. No additional development (status quo). Management and use	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would be *minor to moderate* throughout the National Area,	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the

Consequences On…	No-Action Alternative C	Preferred Alternative D	Alternative A	Alternative B
	addressed by legislation only.	with mitigation and monitoring. Development and use limits addressed by legislation and *seven* management zones, with prescriptions.	same as "Preferred Alternative," but slightly *less* area affected. Development and use limits addressed by legislation and *three* management units, with prescriptions.	same as "Preferred Alternative," but slightly *more* area affected. Development and use limits are same as "A".
Historical Resources	Resources threatened. Individual projects provide benefits inside the National Area and include specific consideration of impacts. No additional development (status quo). Management and use addressed by legislation only.	Still threatened, but greater potential benefit from focused, strategic management. Impacts from development actions and increased visitation would be *minor to moderate* throughout the National Area, with mitigation and monitoring. Development and use limits addressed by legislation and *seven* management zones, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *less* area affected. Development and use limits addressed by legislation and *three* management units, with prescriptions.	Still threatened, but greater potential benefit from more focused management than no-action but less than "Preferred Alternative." Impacts from development and increased visitation essentially the same as "Preferred Alternative," but slightly *more* area affected. Development and use limits are same as "A".
Visitor Use and Experience	Adequate access to many key resources but quality is being compromised	Enhancement through comprehensive strategies	Enhancement through additional strategies beyond no-action but less than "Preferred Alternative."	Enhancement through additional strategies beyond no-action but less than "Preferred Alternative."

Consequences On…	No-Action Alternative C	Preferred Alternative D	Alternative A	Alternative B
Socioeconomic Environment				
Impact of National Area Operations	Annual economic benefit to local area of $10 -16 million annually	Greater benefits, resulting from increased staff, new development and rehabilitation, and expanded resource management programs. *Moderate to major* beneficial impact to local community; *moderate* impacts to region.	*Moderate* beneficial impact to local community; *moderate* impacts to region.	*Moderate to major* beneficial impact to local community; *moderate* impacts to region.
Tourism and Recreation	Benefits from current upward visitation trends	Focused management efforts produce greater visitor satisfaction and potential for greater increases in visitation. *Moderate to major* beneficial impact to local community; *moderate* impacts to region.	*Moderate* beneficial impact to local community; *moderate* impacts to region.	*Moderate to major* beneficial impact to local community; *moderate* impacts to region.
Concessions	Benefits from current upward visitation trends	*Minor to moderate* beneficial impacts resulting from increased visitation.	*Minor* beneficial impacts resulting from increased visitation.	*Minor to moderate* beneficial impacts resulting from increased visitation.
Operational Efficiency	No change (status quo)	Increased operational efficiency from focused, strategic management, increased staff, several new administrative facilities, and a designated roads and trails	Same as "Preferred Alternative," but somewhat less due to less focused management strategies	Same as "Preferred Alternative," but somewhat less due to less focused management strategies

Consequences On…	No-Action Alternative C	Preferred Alternative D	Alternative A	Alternative B
		system. Impacts are *minor to moderate* and beneficial.		
Impairment	Impairment	None	None	None
Consistency with the Plans of Others	Continuing confusion, except in some specific instances	Clearer direction would provide greater consistency. Alternative is generally consistent with known goals	Essentially the same as "Preferred Alternative"	Essentially the same as "Preferred Alternative"
Unavoidable Adverse Effects	Continuing potential for degradation of natural and cultural resources	Increased use and limited new development would have unavoidable residual adverse effects.	Same as "Preferred Alternative"	Same as "Preferred Alternative"
Irretrievable or Irreversible Commitments of Resources	No change (status quo)	Development of new facilities is considered a permanent commitment of resources.	Same as "Preferred Alternative"	Same as "Preferred Alternative"
Relationship between Short-term Uses of the Environment and Maintenance and Enhancement of Long-term Productivity	Long-term resource sustainability is at risk	Comprehensive management strategies provide high potential for balancing short and long term goals.	More potential than no-action and less than "Preferred Alternative" due to less focussed strategies.	More potential than no-action and less than "Preferred Alternative" due to less focussed strategies.