FINDING OF NO SIGNIFICANT IMPACT
For

Environmental Assessment
Remediation of Selected Contaminated Mine Drainage Sites
Big South Fork National River and Recreation Area,
McCreary County, Kentucky

The selected alternative is Alternative 5 from the Environmental Assessment (EA), Combination of Blue Heron Spoils, Devils Jump Settling Pond, and Unnamed Tributary 3 Concrete Lined Stream, which represents the proposed action and the preferred alternative. The National Park Service (NPS) issued a letter of approval on April 27, 2016, for the U.S. Army Corps of Engineers (USACE) to complete the proposed project on NPS property pending final approval of the EA. A detailed description of this alternative is included in the Finding of No Significant Impact (FONSI) and in the EA.

The NPS will make lands available for the USACE to implement the selected conservation measures that were developed by NPS, USACE and the U.S. Fish and Wildlife Service, including activities associated with design, construction, and monitoring of the selected remediation project. All of the stipulations identified in the EA (and included in the FONSI) will apply as conditions of approval. After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal actions are consistent with existing national environmental policies and objectives as set forth in Section 101 (a) of the National Environmental Policy Act, and that they will not significantly affect the quality of the human environment.

Recommended: Niki Stephanie Nicholas Date: August 14 2016

Niki Stephanie Nicholas, PhD
Superintendent
Big South Fork National River & Recreation Area

Approved: Stan Austin Date: 8/15/16

Stan Austin, Regional Director
Southeast Region, National Park Service

INTRODUCTION

The U.S. Army Corps of Engineers, Nashville District (USACE) in cooperation with the National Park Service (NPS) prepared the Environmental Assessment (EA) for Remediation of Selected Contaminated Mine Drainage Sites, Big South Fork National River and Recreation Area (BISO), McCreary County, Kentucky. During 2007, Lake Cumberland, which is managed by the USACE was lowered to a target elevation of 680 feet mean sea level to reduce the risk of failure while repairs were being made to Wolf Creek Dam. Lower reservoir elevations allowed approximately 10 river miles (miles 33.5 to 44) of the Big South Fork of the Cumberland River (BSF) to revert to natural free flowing conditions where they had been previously inundated at times over the last sixty years.

Prior to returning to normal reservoir operations, U.S. Fish and Wildlife Service (FWS) required that the USACE conduct surveys for federally listed aquatic species within areas of the BSF that would be inundated under a return to normal operations. The USACE committed to conduct these surveys in a Record of Decision signed for the 2008 Final Environmental Impact Statement titled Wolf Creek Dam/Lake Cumberland, Emergency Measures in Response to Seepage. Surveys were conducted in September and November, 2013 to determine the presence/absence of federally protected aquatic species in the affected reach of the BSF. During these surveys, the federally endangered duskytail darter (*Etheostoma percnurum*) was observed in 8 of 15 exposed riffle sites. Prior to these surveys, historic records for the duskytail darter indicated that it was only observed upstream of the affected reach in Tennessee and Kentucky.

Following the 2013 aquatic survey which identified the presence of the endangered duskytail darter in the reach of the BSF affected by the return to normal pool operations, the USACE prepared a Biological Assessment (BA) and requested the FWS initiate formal consultation under the Endangered Species Act (ESA). An Incidental Take Statement (ITS) and associated Biological Opinion (BO) were issued by the FWS in March 2014. In conducting the ESA consultation, the NPS, USACE, and FWS attempted to develop conservation measures (CMs) that would improve habitat conditions within much of the historical reach of the BSF for the duskytail darter. This reach is contained entirely within BISO which is managed by the NPS. The USACE committed to implementing those water quality/habitat improvement CMs in cooperation with the NPS who administers the lands affected. Previous efforts by the NPS had identified a suite of contaminated mine drainage remediation projects associated with coal mining that preceded the park's establishment. From the suite of projects, the NPS recommended several that appeared feasible within the timeframe of the BO. The first term and condition relating to these projects was entering into a Memorandum of Understanding (MOU) with the BISO and the FWS. This was completed on July 29, 2014. In this MOU, the USACE agreed to be lead agency for any necessary National Environmental Policy Act (NEPA) requirements. The NPS is acting as a cooperating agency. The USACE is acting as a participating agency for an Environmental Impact Statement that the NPS is conducting for all contaminated mine drainage remediation sites in the BISO.

The purpose of the proposed action is the remediation of a minimum of two contaminated mine drainage sites for water quality improvements and one sediment abatement site on NPS lands to fulfill the requirements of the ITS and associated BO. The proposed project would help improve the water quality and aquatic habitat in the BSF for the duskytail darter. Completion of the proposed project would allow Wolf Creek Dam and Lake Cumberland to return to normal operations. The EA defined the specific sites associated with this proposed action, explored possible remediation methods at each site, and identified the affected environment and environmental consequences associated with the proposed action for the final array of at least three sites. The EA also recognized the NPS as the land manager making lands available through a letter of approval for the USACE to construct the CMs selected, including activities associated with design, construction, and monitoring of the selected remediation projects.

The EA was prepared pursuant to NEPA (42 USC 4321 et seq.), Council on Environmental Quality regulations (40 CFR, 1500-1508), NPS Director's Order 12 (Conservation Planning, Environmental Impact Analysis and Decision-making), the National Parks Omnibus Management Act of 1998 (16 USC 5901 et seq.), USACE Regulation ER 200-2-2, titled Policies and Procedures for Implementing NEPA, and the Operation and Maintenance authority for Wolf Creek Dam - Lake Cumberland Kentucky.

The proposed project was first made available for public comment through a scoping letter on November 24, 2014. In addition the EA was provided to resource agencies and made available to the public for a 30-day review and comment period on June 20, 2016. Responses were considered before finalizing the EA and FONSI and included in Appendix D of the EA. In addition to the EA review, a public open house to discuss the proposed project was held at the BISO Kentucky Ranger Station in Stearns, Kentucky, on June 30, 2016.

SELECTED ACTION

The selected action is to implement Alternative 5 - Combination of Blue Heron Spoils (BHS), Devils Jump Settling Pond (DJSP), and Unnamed Tributary 3 Concrete Lined Stream which is the environmentally preferred alternative. These sites were determined to provide benefits in water quality and sediment reduction to the BSF in the reach containing the endangered duskytail darter. A detailed description of this alternative is included below.

The selected action includes a combination of sites at BHS, DJSP, and Unnamed Tributary 3 Concrete Lined Stream Remediation Alternatives described in Sections 2.4.2, 2.4.3, and 2.4.4 of the EA. The USACE is to fund, design, and implement a minimum of two water quality and one sediment abatement projects to improve the affected reach of the BSF. The NPS will provide enforcement of trail closures, archaeological monitoring and oversight as needed. Three sites affected by coal mining (sediment production or contaminated mine drainage) within the Blue Heron vicinity of BISO are required to meet the terms and conditions of the ITS. The combination of BHS (both water quality and sediment abatement), DJSP (water quality), and Unnamed Tributary 3 Concrete Lined Stream (sediment abatement) remediation measures will reduce contaminated mine drainage and/or sedimentation from entering the BSF and improve

water quality conditions. Project descriptions for each remediation alternative site can be found below.

The FWS has reviewed the EA and proposed plans and concurred that Alternative 5 meets the intent of the Terms and Conditions of the ITS. A monitoring plan will be developed and implemented to document the effects of these remediation projects over time to ensure compliance with the March 2014 BO on returning Lake Cumberland to normal pool levels. Implementation impacts associated with these remediation projects will be minor and short-term in duration and should be positive over the long-term as they address issues with remnants of past coal mining. There will be some short-term disruption of recreational uses during construction (limited trail closures and parking). However, once construction activities are completed access to trails, roads, and parking lots will be restored and reopened for public use.

Blue Heron Spoils

The BHS site will involve bank stabilization by riprapping approximately 300 linear feet of the BSF stream bank. Construction at the BHS site will follow the steps outlined and discussed below.

Access Route Improvement

In order to access the BHS site, portions of the existing Laurel Branch Horse Trail will require minor modifications and improvements. Installation of devices according to the State of Kentucky Best Management Practices (BMPs) to minimize and control sedimentation and erosion will be done prior to any construction activities.

Excavation of Spoil Material/Sloping of the Existing Bank

The existing banks (mostly spoil material) will be cut back to a 2:1 (horizontal: vertical) slope. This will require the removal of approximately 3,250 cubic yards of spoil material. This cut material will come from a zone along the top of the existing vertical scarp as illustrated in detailed plans of the site.

On November 18, 2015, a composite sample of material to be excavated was collected within the cut zone and analyzed per the toxicity characteristic leaching procedure (TCLP) to help determine ultimate disposal options for the material. The TCLP test indicated that the material does not exhibit the characteristics of a hazardous waste, and the excavated material is not required to be disposed of at a Resource Conservation and Recovery Act landfill. Rather the material may be disposed of at a solid waste (commercial) landfill as a special waste (contingent on state and landfill approval of special waste). The nearest landfill is the Volunteer Regional Landfill located in Scott County, Tennessee.

Seep(s) Water Quality Improvement Measures

In order to help address seeps located throughout the length of BHS, approximately 612 tons of dense grade aggregate (DGA) crushed limestone will be placed along the entirety of BHS. Prior to placing the DGA crushed limestone, filter fabric material will be placed on the spoil face to

allow water to percolate through the filter fabric and DGA crushed limestone. The DGA crushed limestone will be a onetime application and may eventually lose buffering effectiveness as limestone is dissolved or coated with reaction products. However, the rate and timeframe of buffering is unknown.

Placement of Riprap for Stabilizing Bank

Approximately 10,428 tons of Kentucky Transportation Cabinet (KYTC) Class III limestone riprap will be placed at a 2:1 (horizontal: vertical) slope. BHS plans can be found in Appendix B of the EA. The BHS site will be monitored for stability and near shore water quality improvements.

Devils Jump Settling Pond

The DJSP will include the conversion of the lower pond to a meandering stream through a limestone-lined outlet channel to the BSF floodplain. As discussed in Section 2.1.4 of the EA, the DJSP site consists of two depressional wetlands (Upper and Lower Pond) totaling approximately 0.10 acres. Construction activities will primarily take place within the dividing berm of the Upper Pond and the Lower Pond. This dividing berm appears to consist of compacted spoil material.

Vegetation Clearing and Access Route Improvement

In order to access DJSP, portions of the existing Laurel Branch Horse Trail and Blue Heron Loop Trail will require temporary closures and improvements. Installation of BMPs to reduce sedimentation and erosion will be installed prior to any construction activities. Most of the access is described previously for accessing the BHS site. Construction at the DJSP site will require additional modifications to approximately 0.06 miles of the Blue Heron Loop Trail. To aid in construction and improvement of the habitat within the new channel and wetland area, a few trees previously removed will be used. All remaining trees will be either scattered throughout the adjacent forested area or hauled off to an approved disposal site.

Protection of the Upper Pond

In order to maintain the hydrology within the upper pond, temporary water retention structures such as sand bags, clay berm, and/or coffer dam will be installed just above the spillway and excavation areas. These structures will be monitored during construction to ensure the hydrology of the upper pond is not altered. Following completion of construction activities at DJSP, all temporary retention structures will be removed.

Excavation of Spoil Material

Prior to excavation of the spoil material, the lower pond area will be dewatered. The dewatering of the lower pond will follow applicable Kentucky Division of Water (KDOW) regulations and permit conditions. Approximately 420 cubic yards of spoil material, located between the upper and lower ponds, would be removed to an elevation of 770 feet. In addition to the spoil material removed between the upper and lower ponds, approximately 600 cubic yards of spoil material

will be excavated to an elevation of 770 feet at the outlet of the lower pond. A key construction consideration is to maintain the water level in the upper pond/wetland. This will be monitored during construction and re-established in a timely manner with the use of temporary measures such as sand bags or equivalent techniques. The existing lower pond outlet culvert will be removed as well and following construction will be replaced with a span bridge constructed in accordance with NPS trail specifications since this serves as a portion of the Blue Heron Loop Trail.

The TCLP sample that was described in the BHS section also included an aliquot of the DJSP material to be excavated. The TCLP test indicated that the material does not exhibit the characteristics of a hazardous waste, and therefore disposal may be at a solid waste (commercial) landfill as a special waste as noted above for the previous site.

Creation of a Limestone Lined Stream Channel from the DJSP Outlet of the Upper Pond to the BSF

Following installation of BMPs, dewatering the lower pond, and removal of spoil material from the identified locations, a new channel and spillway (discussion to follow) will be constructed from the outlet of the upper pond to the BSF floodplain. This channel will be approximately two feet in depth with a bottom width of three feet. The banks (mostly spoil material within the lower pond) will be cut back to a 2:1 (horizontal: vertical) slope making the top of bank approximately 11 feet in width. Approximately 330 tons of KYTC Class II riprap (minimum of 9 inches) will be placed throughout the stream to line the stream banks and channel bottom. In-stream features such as logs, larger stones, step pools, and different sized gravels will be placed throughout the channel length to provide additional aquatic habitat. The remaining wetland surrounding the newly created channel (former portions of lower pond) will be replanted with native saplings and/or herbaceous species suitable for anaerobic conditions. The lowermost portion of the stream will naturally braids and percolates into the floodplain. The new limestone-lined channel would be tied into this braided portion and would end above the ordinary high water mark of the BSF. The new channel would be constructed to handle typical high flow events of the BSF.

Installation of a Limestone Spillway between the Upper Pond and the New Riprap Lined (Former Lower Pond) Stream Channel

Once spoil material is excavated approximately 210 tons of DGA crushed limestone will be placed at a 2:1 (horizontal: vertical) slope to create a suitable base for the spillway. To insure the hydrology within the upper pond is not altered a clay wedge will be constructed within the limestone spillway. This will aid in the reduction of water seeping through the limestone spillway. Prior to placing the DGA crushed limestone, filter fabric material will be placed to allow water to percolate through the filter fabric and DGA crushed limestone.

Approximately 248 tons of KYTC Class II riprap will be placed at a 2:1 (horizontal: vertical) slope. The DJSP plans can be found in Appendix B of the EA. The spillway is intended to control water at an elevation of approximately 772.5 feet to avoid lowering water levels in the

upper pond. The spillway will overtop and flow through the newly constructed limestone riprap lined channel.

Replanting of Wetland Areas surrounding the Newly Created Limestone Lined Channel

In order to construct the limestone lined channel and spillway, approximately 0.05 acres of wetlands will be impacted in the footprint of the lower pond and immediate fringe. Temporary wetland impacts will occur in the entire lower pond during construction and 0.04 acres will be permanently impacted due to the creation of the limestone lined channel. Temporary wetland impacted areas will be replanted with native saplings and/or herbaceous species suitable for anaerobic conditions and approved by the USACE, NPS, and KDOW.

Unnamed Tributary 3 Concrete Lined Stream

Unnamed Tributary 3 Concrete Lined Stream will involve installing limestone step pools to include cross vanes and minor bank and channel stabilization by riprapping in highly degraded areas identified within the stream channel. The channelized section of stream was likely done in the 1970's to route water in the drainage around the adjacent BHS area. Currently, due to the steep stream banks, bank erosion occurs during high flow events. By constructing stone step pools to include cross vanes and placement of riprap along major bank erosional areas water velocities will be lowered and additional erosion and sedimentation loads entering the BSF will be limited. Construction activities will start at the end of the existing concrete-lined channel. Unnamed Tributary 3 Concrete Lined Stream will follow the steps outlined and discussed below.

Access Route Improvement

In order to access Unnamed Tributary 3 Concrete Lined Stream, portions of the existing Laurel Branch Horse Trail will be improved and a short section of an old access path will require temporary improvements. The old access path is primarily across the BHS site with short segments to access the channel at strategic locations. Installation of BMPs such as but not limited to silt fences, rock check dams, corridor rolls, to reduce sedimentation and erosion will be installed prior to any construction activities. Following construction, areas disturbed will be replanted with NPS approved native species.

Placement of Limestone for Stabilizing Bank and Step Pools to include Cross Vanes

Following the installation of BMPs and improvement of channel access points, limestone step pools to include cross vanes will be placed in highly degraded areas identified within Unnamed Tributary 3 Concrete Lined Stream. Each limestone step pool will be constructed of approximately 23 cubic yards of KYTC Class III riprap.

Banks of Unnamed Tributary 3 Concrete Lined Stream are eroding in multiple areas and are introducing sediment into the BSF. During construction, bank erosion areas will be improved by placing limestone riprap along the bank toes. Following the placement of a non-woven geotextile fabric each major bank erosion section will be sloped back to an appropriate slope (typically 2:1 (horizontal: vertical). Additional limestone could be placed in the channel for stabilization, habitat structure, and water quality improvements. Unnamed Tributary 3 Concrete

Lined Stream plans can be found in Appendix B of the EA. Stream banks impacted during the implementation of Alternative 5 will be seeded with native herbaceous species approved by NPS and KDOW when possible to aid in bank stabilization.

MINIMIZATION AND MITIGATION MEASURES

The USACE has committed to implementing a variety of measures, standard operating procedures, and best management practices as part of the proposed project to prevent lasting impacts and minimize short-term impacts to resources within the project area of the BISO. The following will be applied to further avoid and minimize potential impacts from implementation of the selected action. The NPS, FWS, and KDOW have approved the following minimization and mitigation measures and NPS approval of the proposed project will be conditioned upon the USACE agreeing to implement the following:

1. In an effort to minimize negative visitor experience for those who may pass through existing trails within the project area, the USACE will work with the NPS in posting informational notices at trail heads, visitor/recreational access points and rest areas, and on appropriate Internet sites.

2. The USACE will provide extensive monitoring during the project and post-survey monitoring of selected sites that are impacted by the proposed project activities. The monitoring will be done by the USACE along with the NPS. Post-survey monitoring will be conducted over a minimum of five years per the KDOW water quality permit and FWS ITS and BO to determine the success of the remediation activities. If successful recovery is not identified during the period of post-project monitoring, the USACE will be required to return to those areas to conduct additional restoration activities as identified by the NPS, KDOW, and FWS. A detailed mitigation and monitoring plan can be found in Appendix A of the EA. The need for this plan is to show that the project would have negligible adverse impacts to fish and other aquatic species, wildlife, and wetland losses. This plan demonstrates that damages to ecological resources, both terrestrial and aquatic, have been avoided and minimized to the extent practicable, and that any remaining unavoidable damages have been compensated for or mitigated to in-kind conditions.

3. A Kentucky Pollutant Discharge Elimination System permit for Stormwater Discharges is required for stormwater discharges for construction projects disturbing greater than one acre of land. The contractor will be required to obtain this permit.

4. Approximately 0.04 acres of the wetlands identified at DJSP will be permanently impacted as a result of the preferred alternative. No mitigation will be required due to the amount of wetland impacts per USACE, NPS (Cowardin), and KDOW criteria. However, attempts will be made to mitigate for wetland impacts (0.04 acres) within and adjacent to DJSP. See the mitigation and monitoring plan found within the Appendices of the EA for more detail.

5. This project is being done in accordance with the BO issued by the FWS to the USACE. All phases are being coordinated with the FWS to ensure compliance with the BO and any other requirements of the ESA.

    a. Suitable summer roost trees are to be removed between November 15 – March 31.
    b. Mussel surveys along the shoreline of BHS are to be completed prior to work.

FINDING OF NO SIGNIFICANT IMPACT

As described in the EA, the selected action is to implement Alternative 5 which is the environmentally preferred alternative. These sites were selected for remediation because they will provide measurable benefits in water quality and sediment reduction to the BSF in the reach containing the endangered duskytail darter. The FWS has reviewed the EA and proposed plans and concurred that Alternative 5 meets the intent of the Terms and Conditions of the BO. A monitoring plan has been developed and will be implemented to document the effects of these remediation projects over time to ensure compliance with the March 2014 BO on returning Lake Cumberland to normal pool levels. Overall, implementation impacts associated with these remediation projects will be minor and short-term in duration and positive over the long-term as they address issues with remnants of past coal mining. There will be some short-term disruption of recreational uses during construction (limited trail closures and parking). However, once construction activities are completed access to trails, roads, and parking lots will be restored and reopened for public use. There will be short term negligible impacts to air quality due to the small degree of construction activities and minimal potential for dust generation as well as minimal emissions from construction equipment. Approximately 0.04 acres of low quality wetland will be permanently impacted during construction, however by constructing a meandering riprap-lined channel through the lower pond wetland area and removing spoil/water interaction in the berm between the two ponds, CMD effects will be reduced and water quality will improve. Construction access, laydown areas, and project footprints will require minor clearing of vegetation. Temporary negligible impacts to wildlife species is anticipated during construction due to loss of habitat, forage, and potential displacement. Short-term minor impacts to existing geology, topography, and soils are anticipated during construction due to grading of topography, minor temporary trail improvements, and removal of soil and mine spoil material. However, implementation will result in moderate long-term positive benefits by stabilizing banks which will reduce sloughing while also reducing sedimentation and CMD from entering the BSF.

Minor to moderate short-term impacts to aquatic species will occur at the BHS site during construction from CMD and sedimentation. Impacts will be minimized because work will be segmented (< 100 feet) into shorter bank sections so that rock placement will be done as quickly as possible to reduce the exposure time of disturbed bank faces. BMPs will be in place to reduce these impacts during construction. Long-term positive benefits are anticipated following construction by buffering of CMD and sedimentation, stabilization of BHS bank, and improving water quality resulting in improved aquatic habitat within the BSF.

At the DJSP site negative impacts to aquatic species will result from the removal of mine spoil material and the dewatering of the lower wetland area. However, the effects are expected to be minimal because the water quality within the lower wetland area is so degraded (see Section 3.3.2 of the EA) and unsuitable for most aquatic species. Construction will include the removal of spoil material and this will result in the neutralization of CMD which is anticipated to improve the water quality of the wetland in the lower pond. By improving the water quality within the wetland area, this area will be more suitable for aquatic species and will also aid in the reduction of sediment and CMD from entering the BSF.

At the Unnamed Tributary remediation site the existing channel will have to be temporarily diverted and/or work will be done in the dry or during periods of no or low flow. This will allow construction equipment to place stone and other features in the existing stream, remove unwanted materials, and stabilize eroding banks with limestone. Aquatic species within the channel will be directly impacted during construction due to the placement of fill material (i.e. limestone riprap of assorted size). Based on the multiple site visits, very little aquatic fauna has been observed within the stream and impacts to aquatic species will be considered a minor short-term adverse impact. The site assessments also showed that the stream is heavily impacted by sedimentation. Construction will greatly aid in the reduction of sedimentation and bank erosion. The reduction of sediment and erosion will improve the water quality and ultimately improve the aquatic life.

One shagbark hickory and three snags that meet the FWS criteria for Indiana and/or northern long-eared bat summer roost habitat are located along the proposed access path. Due to the contours and slope of the access route these trees will be removed to aid in the stability and slope of the proposed access path. Based on adjacent habitat, low number of potential trees to be impacted, and the timing of tree removal (November 15 – March 31) the USACE made the determination of "not likely to adversely affect the Indiana and/or northern long-eared bats." In order to construct the BHS project, a shallow shoreline strip will be impacted by placement of riprap. The placement of the riprap within the BSF could impact federally listed species if present. Documented within the BO, the FWS concurred with the determination of "may affect – not likely to adversely affect" for the federally listed mussel species and the duskytail darter. However, prior to construction, proactive measures to include surveys for mussels will be completed by the Tennessee Valley Authority to ensure no federally listed mussel species are present. If found, mussels will be removed and re-established outside of the project footprint in suitable habitat to avoid any potential impacts. Coordination with the FWS for the removal of the four identified suitable summer roost habitat trees and potential impacts to federally listed aquatic species was initiated on May 18, 2016. In an email dated June 3, 2016 the FWS concurred with the USACE determination and proactive measures.

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, was initiated with the Kentucky Heritage Council (KHC), American Indian Tribes with an ancestral connection to BISO, and other consulting parties on December 5, 2014. A letter was received on August 12, 2016, stating State Historic Preservation Office (SHPO) concurrence with the

USACE and NPS determination that the project would have "no adverse effect to historic properties."

Long-term positive benefits are anticipated following construction by buffering of CMD and sedimentation, stabilization of BHS bank, and improving water quality resulting in improved aquatic habitat within the BSF. Because of these benefits and because adverse effects to resources are minor and temporary and the permanent loss of low quality wetlands will be replaced with improved water quality, improved habitat, and the reduction of CMD, the project will result in no significant impacts to park resources.

DECISION REACHED AND RATIONALE

The NPS has selected Alternative 5, the environmentally preferred alternative, for implementation as described in this FONSI and the EA. The NPS will make lands available through a letter of approval for the USACE to construct the CMs selected, including activities associated with design, construction, and monitoring both prior, during, and immediately following construction of the selected remediation projects. The EA serves to define the specific sites associated with this proposed action, explore possible remediation methods at each site, and identify the affected environment and environmental consequences associated with the proposed action for the final array of at least three sites.

All practicable means to avoid and minimize adverse environmental effects have been incorporated into the recommended plan. Any short-term adverse impacts to resources due to construction will ultimately result in long-term positive benefits to surface water and the watershed by a combination of sediment and CMD reduction within the project area as well as the BSF. All short-term impacted areas will be restored to a natural state and replanted with native vegetation. While the slight loss of the degraded wetlands will occur, the overall quality of wetland will be improved and downstream water quality improved by reducing spoil/water interactions.

The recommended plan will not result in any significant direct or indirect impacts, causing only minimal and temporary adverse impacts during construction to water quality, aquatic resources, terrestrial resources, socioeconomics, noise, navigation, recreation and scenic resources.

All applicable laws, executive orders, regulations, and local government plans were considered in the evaluation of the alternatives. It has been determined that the selected action would not cause impairment to park resources (Appendix A – Non-Impairment Determination). It has also been determined that the selected action does not constitute a major federal action that would significantly affect the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Appendix A

NON-IMPAIRMENT DETERMINATION
For
Remediation of Selected Contaminated Mine Drainage Sites
Big South Fork National River and Recreation Area
McCreary County, Kentucky

By enacting the National Park Service (NPS) Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of Interior and the NPS to manage units "to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations" (16 USC sec 1). Congress reiterated this mandate in the Redwood National Park Expansion act of 1978 by stating that NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress" (16 USC 1a-1). Both of these acts are now under the umbrella of Title 54, "The National Park Service and Related Programs" (54 USC 100101).

NPS Management Policies 2006, Section 1.4.4, explains the prohibition on impairment of park resources and values:

> *"While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the Nation Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them."*

The NPS has discretion to allow impacts on Park resources and values when necessary and appropriate to fulfill the purposes of a Park (NPS 2006 sec 1.4.3). However, the NPS cannot allow an adverse impact that would constitute an impairment when its impacts "harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values" (NPS 2006 sec 1.4.5). To determine impairment, the NPS must evaluate "the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts" (NPS 2006 sec 1.4.5).

As stated in NPS Management Policies 2006 (NPS 2006, section 1.4.5), an impact on any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified in the park's general management plan (GMP) or other relevant NPS planning documents as being of significance.

The Area's purpose and significance were considered during the impairment determination process for the selected action. Congress established Big South Fork National River and Recreation Area for the purpose of:

> *….conserving and interpreting an area containing unique cultural, historic, geologic, fish and wildlife, archaeologic, scenic and recreational values, preserving as a natural free-flowing stream the Big South Fork of the Cumberland River, major portions of its Clear Fork and New River stems, and portions of their various tributaries for the benefit and enjoyment of present and future generations, the preservation of the natural integrity of the scenic gorges and valleys and the development of the area's potential for healthful outdoor recreation* (PL 93-251).

Statements of a park's significance describe why a park is important within a global, national, regional, and ecosystem-wide context and are directly linked to the purpose of the park. Big South Fork National River and Recreation Area is significant because, the scenic, ecologic, and historic values of the Big South Fork of the Cumberland River have created an area of unique beauty with outstanding outdoor recreational opportunities. As a natural free-flowing stream, the river offers some of the best white water canoeing in the eastern United States. Big South Fork represents the first time the concept of a National River and a National Recreation Area has been combined and reflects a decision that preservation and recreational enhancement are the appropriate goals for the area. Preservation will ensure that continuation of the dynamic natural processes which have shaped the landscape while yet being more responsive to outdoor recreation demand than other areas which are established primarily for preservation and natural and historical resources.

Non-Impairment Determination for the Selected Action

The selected action is not expected to adversely affect natural resources because the project has been designed to improve the water quality and aquatic habitat in the Big South Fork of the Cumberland River (BSF). The U.S. Army Corps of Engineers, Nashville District (USACE) in cooperation with the NPS prepared the Environmental Assessment (EA) for Remediation of Selected Contaminated Mine Drainage (CMD) Sites, Big South Fork National River and Recreation Area, McCreary County, Kentucky. The EA defined the specific sites associated with this proposed action, explored possible remediation methods at each site, and identified the

affected environment and environmental consequences associated with the proposed action for the final array of at least three sites.

Overall, implementation impacts associated with these remediation projects will be minor and short-term in duration, and positive over the long-term as they address issues with remnants of past coal mining.

Air Quality

There will be short term negligible impacts to air quality due to the small degree of construction activities and minimal potential for dust generation as well as minimal emissions from construction equipment.

Wetlands, Water Quality and Aquatic Species

Approximately 0.04 acres of low quality wetland will be permanently impacted during construction. However, by constructing a meandering riprap-lined channel, and removing spoil/water interaction between the two ponds, CMD effects will be reduced and water quality will improve. Minor to moderate short-term adverse impacts to aquatic species will occur during construction. Impacts will be minimized because work will be segmented to reduce the exposure time of disturbed areas and BMPs will be in place to reduce these impacts during construction. Long-term positive benefits are anticipated following construction by buffering of CMD and reduction of sedimentation, bank stabilization, and improving water quality resulting in improved aquatic habitat within the BSF. Negative impacts to aquatic species from the removal of mine spoil material and the dewatering wetlands will be minimal because the water quality within the wetlands is so degraded (see Section 3.3.2 of the EA) and unsuitable for most aquatic species. By improving the water quality within the wetland area, this area will be more suitable for aquatic species and will also aid in the reduction of sediment and CMD from entering the BSF.

Vegetation, Protected Wildlife and other Wildlife Species

Construction access, laydown areas, and project footprints will require minor clearing of vegetation. Temporary negligible impacts to wildlife species is anticipated during construction due to loss of habitat, forage, and potential displacement. One shagbark hickory and three snags that meet the U.S. Fish and Wildlife Service (FWS) criteria for Indiana and/or northern long-eared bat summer roost habitat are located along the proposed access path. Due to the contours and slope of the access route these trees will be removed to aid in the stability and slope of the proposed project access. Based on adjacent habitat, low number of potential trees to be impacted, and the timing of tree removal (November 15 – March 31) the USACE made the determination of “not likely to adversely affect the Indiana and/or northern long-eared bats.” Coordination with the FWS for the removal of the four identified suitable summer roost habitat trees and potential impacts to federally listed aquatic species was initiated on May 18, 2016. In an email

dated June 3, 2016 the FWS concurred with the USACE determination and proactive measures. The FWS concurred with the determination of "may affect – not likely to adversely affect" for the federally listed mussel species and the duskytail darter. However, prior to construction, proactive measures to include surveys for mussels will be completed by the Tennessee Valley Authority to ensure no federally listed mussel species are present. If found, mussels will be removed and re-established outside of the project footprint in suitable habitat to avoid any potential impacts.

Geology, Topography and Soils

Short-term minor impacts to existing geology, topography, and soils are anticipated during construction due to grading of topography, minor temporary trail improvements, and removal of soil and mine spoil material. However, implementation will result in moderate long-term positive benefits by stabilizing banks which will reduce sloughing while also reducing sedimentation and CMD from entering the BSF.

Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, was initiated with the Kentucky Heritage Council, American Indian Tribes with an ancestral connection to the Big South Fork National River and Recreation Area, and other consulting parties on December 5, 2014. A letter was received on August 12, 2016, stating State Historic Preservation Office concurrence with the USACE and NPS determination that the project would have "no adverse effect to historic properties."

Conclusion

By allowing the selected action to proceed with minimization and mitigation measures, the park will meet its mission of preserving these resources and associated values unimpaired and retain its significance in assuring the preservation, conservation, and protection of the natural values of the park while providing for the enhancement and public enjoyment of those resources. Because adverse impacts to resources are minimal and the ultimate result of the project will be to improve the water quality and aquatic habitat in the BSF, the NPS has determined that the implementation of the selected action will not constitute an impairment to Big South Fork National River and Recreation Area resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the EA, and the professional judgement of the decision maker guided by the direction in the NPS Management Policies 2006.