

RESTORATION PLAN and ENVIRONMENTAL ASSESSMENT

FOR THE

DAN RIVER COAL ASH SPILL NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION

FINAL

Prepared by

Dan River Natural Resource Trustee Council:

United States Fish and Wildlife Service
North Carolina Department of Environmental Quality
Virginia Department of Environmental Quality



Executive Summary

This Final Restoration Plan and Environmental Assessment (Final RP/EA) has been prepared by United States Department of the Interior (DOI) acting through the U.S. Fish and Wildlife Service (USFWS), the Commonwealth of Virginia acting through the Virginia Department of Environmental Quality (VADEQ), and the State of North Carolina acting through the North Carolina Department of Environmental Quality (NCDEQ) to address natural resources, including ecological services injured, lost or destroyed due to releases of hazardous substances associated with coal ash from the Dan River Steam Station in February 2014 (Spill) in North Carolina and Virginia.

Pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), USFWS, VADEQ, and NCDEQ share trusteeship authority over the natural resources affected by releases at or from the Spill and are collectively referred to as the Natural Resource Trustees (“the Trustees”). See, 42 USC § 9607(f)(2). Under CERCLA, the Trustees are authorized to act on behalf of the public to assess and recover damages for injury to, destruction of, or loss of natural resources and their services caused by the release, or threatened release, of hazardous substances, and to hold responsible parties liable for those damages including the costs of assessing the damages (42 USC 9607). The goal of the Trustees is to “restore, replace or acquire the equivalent” of the natural resources that were injured and ecological services that were lost. See, 42 USC § 9607(f)(1).

The Dan River Coal Ash Spill began on or around February 2, 2014, from the collapse of a stormwater pipe beneath a coal ash slurry impoundment at the Duke Energy Dan River Steam Station (Site) releasing up to an estimated 39,000 tons of ash and 27 million gallons of ash pond water into the Dan River. Three removal actions were subsequently conducted. In their evaluation of potential natural resource injuries, the Trustees determined that the concentrations of hazardous substances in the surface water and sediment of the Dan River were at levels sufficient to cause injury to fish and other aquatic biota. Based on public input, the Trustees evaluated and ultimately proposed a suite of restoration alternatives (see Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration (April 2019)) to compensate for the injuries to natural resources and the loss of ecological and recreational services as a result of the Spill. Under a pending settlement agreement between Duke Energy, the potentially responsible party, and the Trustees, Duke Energy has either performed or has agreed to perform the selected restoration projects to compensate for the injured, lost, or destroyed resources and services resulting from the Dan River Coal Ash Spill. After evaluating the data from the Spill and long-term monitoring data, exploring different scenarios for the ecological service loss and human use models, consulting with experts and the public throughout the NRDAR process, the Trustees are confident that the selected restoration projects compensate for the injured natural resources and lost services as a result of the Spill.

The Trustees made the Draft RP/EA available for public review and comment for a period of 45 days in accordance with the CERCLA and National Environmental Policy Act (NEPA). The Trustees then reviewed and considered the comments received. The comments received and the Trustees’ responses to comments are provided in Appendices D and E, respectively. After consideration of the comments received and the environmental assessment in the Draft RP/EA, each Trustee has approved the Final RP/EA (Appendix F) and the USFWS has issued a Finding of No Significant Impact (FONSI) for the selected projects (Appendix G). Three of the selected restoration projects have been completed as early restoration. The Trustees expect implementation of the remaining selected restoration project (improved recreational access to the Dan River) after the release of this Final RP/EA.

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List of Acronyms and Abbreviations

CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	Contaminants of Potential Concern
CWA	Clean Water Act (or Federal Water Pollution Control Act)
DOI	United States Department of the Interior
DRNRTC	Dan River Natural Resource Trustees Council
FORVA	Friends of the Rivers of Virginia
HEA	Habitat Equivalency Analysis
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCDEQ	North Carolina Department of Environmental Quality
NCDWQ	North Carolina Division of Water Quality
NCWRC	North Carolina Wildlife Resources Commission
NEPA	National Environmental Policy Act
NRD	Natural Resource Damages
NRDAR	Natural Resource Damage Assessment and Restoration
PAS	Preliminary Assessment Screen and Determination
RP/EA	Restoration Plan and Environmental Assessment
SESD	Science and Ecosystem Support Division

TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VADCR	Virginia Department of Conservation and Recreation
VADEQ	Virginia Department of Environmental Quality

1.0 INTRODUCTION

The United States Department of the Interior (DOI) acting through the U.S. Fish and Wildlife Service (USFWS), the Commonwealth of Virginia acting through the Virginia Department of Environmental Quality (VADEQ), and the State of North Carolina acting through the North Carolina Department of Environmental Quality (NCDEQ), collectively the Dan River Natural Resource Trustee Council (Trustees or DRNRTC) initiated a natural resource damage assessment and restoration (NRDAR) process to determine and quantify injuries to natural resources and resource services resulting from the release of hazardous substances at and from the Duke Energy Dan River Steam Station in Rockingham County, NC to the waters of, and to the habitats associated with, the Dan River (Figure 1). As part of the NRDAR process, the Trustees must also identify and select restoration actions that will compensate for the injured resources and services and seek to recover compensation from the entity responsible for these injuries and losses.

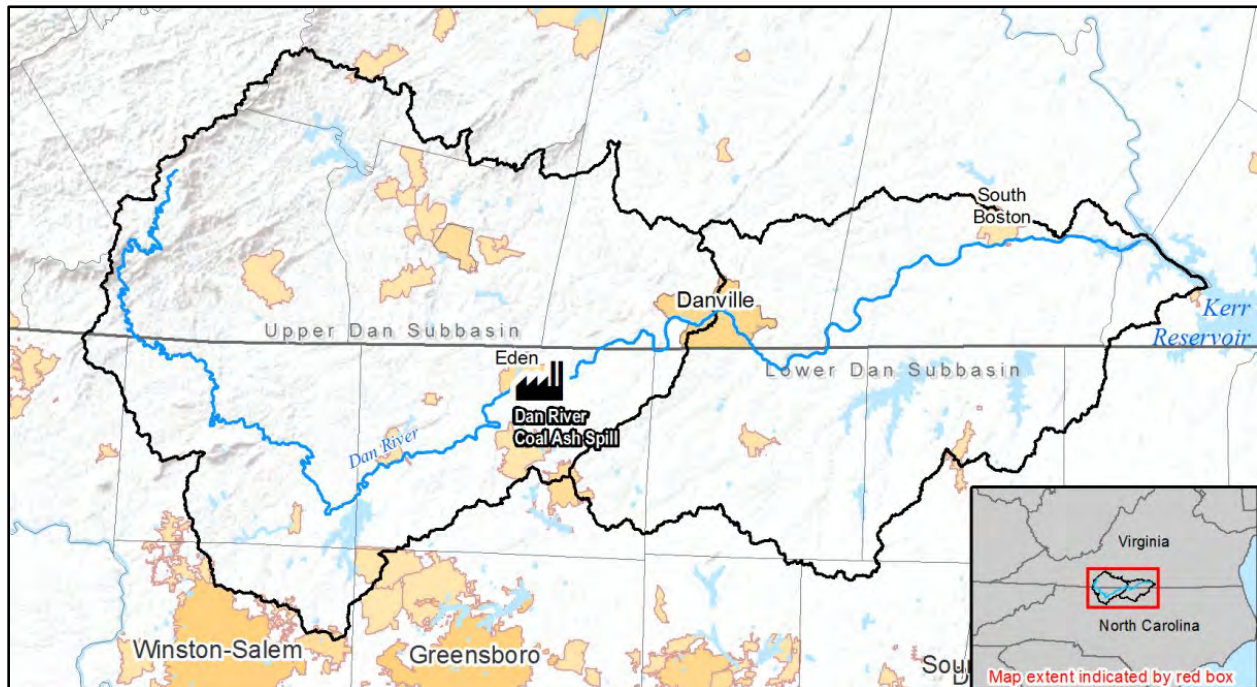


Figure 1. Watershed Map for the Dan River Coal Ash Spill

1.1 Purpose and Need for Restoration

This Final Restoration Plan/Environmental Assessment (Final RP/EA) has been prepared by the Trustees to address natural resources injured and ecological and recreational services lost due to releases of hazardous substances associated with coal ash from the Dan River Steam Station in February 2014 (Spill). The purpose of this Final RP/EA is to present the “selected alternative” restoration project or projects that will accomplish the goal of restoring, rehabilitating, replacing and/or acquiring the equivalent of those natural resources, and the services those

resources provide, that have been injured from the release. The Trustees developed this Final RP/EA in accordance with 43 C.F.R. § 11.93 to inform the public as to the types and scale of restoration to be undertaken to compensate for injuries to natural resources. Consistent with the CERCLA NRDAR regulations, this Final RP/EA includes a reasonable number of restoration alternatives and identifies the selected alternatives.

1.2 Natural Resource Trustees and Authority

Pursuant to the authority of Section 107(f) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. § 9607(f); Federal Water Pollution Control Act (commonly known as the Clean Water Act), as amended, 33 U.S.C. § 1321(f)(4) and (5), (CWA); Subpart G of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. §§ 300.600, 300.605; and other applicable Federal and State laws, designated Federal and State authorities may act on behalf of the public as natural resource trustees to pursue natural resource damages for injury to, destruction of, or loss of natural resources and their services resulting from the release of hazardous substances to the environment.

The President has designated Federal resource trustees in the NCP, 40 C.F.R. § 300.600, and through Executive Order 12580, dated January 23, 1987, as amended by Executive Order 13016, dated August 28, 1996. Pursuant to the NCP, the Secretary of the DOI acts as a Trustee for natural resources and their supporting ecosystems, managed or controlled by the DOI. In this matter, the USFWS is acting on behalf of the Secretary of the DOI as Trustee for natural resources under its jurisdiction, including but not limited to migratory birds and endangered and threatened species.

In accordance with 42 U.S.C. § 9607(f)(2)(B) and the NCP, the Virginia Secretary of Natural Resources has been designated the natural resource Trustee by the Governor of Virginia. The State of North Carolina has designated the Secretary of the NCDEQ as its Natural Resource Trustee representative. The State Trustees act on behalf of the public as Trustee for natural resources, including their supporting ecosystems, within the boundaries of their state, or belonging to, managed by, controlled by, or appertaining to Virginia and North Carolina, respectively.

The State and Federal Trustees may have overlapping jurisdiction over the natural resources potentially affected in this matter. This shared trusteeship is reflected in the coordinated wildlife management practices of the USFWS, North Carolina, and Virginia, and is consistent with the management policies of North Carolina, Virginia, and the USFWS.

This RP/EA was prepared jointly by the Trustees in accordance with Section 111(i) of CERCLA and its implementing regulations (43 C.F.R. § 11.93). In addition, federal trustees must comply with the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 et seq., and its regulations, 40 C.F.R. § 1500 et seq., when planning restoration projects. NEPA requires a federal agency to consider the potential environmental impacts of a planned federal action(s) to determine if the

proposed action(s) may significantly affect the environment and to inform and involve the public in the decision-making process. In compliance with NEPA, this RP/EA summarizes the current environmental setting where the restoration actions may take place, describes the purpose and need for restoration actions, and identifies alternatives and their potential environmental consequences and provides an environmental analysis of the restoration actions. As described in Sections 3.0 and 4.0, Duke Energy completed several of the selected restoration alternatives voluntarily, without federal funds. These completed projects include the Abreu Grogan Park Improvements, Pigg River Power Dam Removal, and conservation of Mayo River through acquisition of property and conveyance to the Commonwealth of Virginia and the State of North Carolina. Prior to completing this subset of selected restoration alternatives, Duke Energy complied with applicable environmental laws, and obtained permits and other approvals, where necessary. Consistent with federal laws, the DOI will evaluate the selected restoration alternatives identified in this RP/EA that are not yet complete for compliance with other applicable laws. In this Final RP/EA document, the Trustees present the selected restoration alternatives for implementation as well as selected restoration alternatives already completed. For this RP/EA, other potentially applicable laws and regulations include:

- The Endangered Species Act (ESA), (16 U.S.C. § 1531, *et seq.*)
- Clean Water Act, (33 U.S.C. § 1251, *et seq.*)
- National Historic Preservation Act of 1966, (16 U.S.C. § 470 *et seq.*)

1.3 Public Participation

Public participation is an important step in the NRDAR and NEPA processes. The Trustees have worked to engage local communities and other stakeholders in the NRDAR process since the Spill, beginning with meetings in the early stages of the Spill to introduce the NRDAR process to interested members of the public.

The public was also invited to propose projects for review and incorporation into the Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration (April 2019) (Draft RP/EA)). Public review of the Draft RP/EA Plan is an integral component of both NEPA and the CERCLA NRDAR process pursuant to 43 C.F.R. § 11.81(d)(2) and § 11.93. Through the public review process, the Trustees sought public comment on the restoration alternatives and the Trustees' preferred restoration alternatives to restore injured natural resources or replace resource services lost as a result of the Spill. The notice of availability of the Draft RP/EA and opportunity for the public to provide comments was published in a Federal Register Notice of Availability on July 26, 2019 and notice of availability was advertised in *Eden Daily News*, *Greensboro News and Record*, and *Danville Register & Bee*. The Draft RP/EA was open for public comment for 45 days from July 26, 2019, the date of publication of the Notice of Availability in the Federal Register, until September 9, 2019. The Trustees held public meetings on August 6, 2019, in Danville, Virginia and on August 7, 2019, in Eden, North Carolina.

The Trustees reviewed and considered all public comments and input on the Draft RP/EA received during the public comment period prior to finalizing the RP/EA. The public comments

received and the Trustees' responses to those comments are included in Appendices D and E, respectively.

Trustees have maintained records documenting the information considered and actions taken during this NRDAR process. These records are available on the [Dan River Coal Ash NRDAR website](#). Physical copies of the records are also available for review by interested members of the public at the USFWS Virginia Field Office, 6669 Short Lane, Gloucester, VA 23061, however arrangements must be made in advance to review or obtain copies of these records by contacting:

Susan Lingenfelter, U.S. Fish and Wildlife Service
Virginia Ecological Services Field Office
Phone: 804-824-2415
Email: Susan_Lingenfelter@fws.gov

Access to and copying of these records is subject to all applicable laws and policies, including, laws and policies relating to copying fees and the reproduction or use of any material that is copyrighted.

1.4 Overview of the Dan River Coal Ash Spill

The Dan River Coal Ash Spill began on or around February 2, 2014, from the collapse of a stormwater pipe beneath a coal ash slurry impoundment at the Duke Energy Dan River Steam Station (Site).

Ash material and ash pond water within the reservoir were released into the Dan River as a result of failure of a 48-inch diameter stormwater pipe comprised of concrete and corrugated metal. Up to an estimated 39,000 tons of ash and 27 million gallons of ash pond water were released into the Dan River. Coal ash is a gray, powdery byproduct of burning coal to produce energy. Coal ash is composed of materials remaining after coal is burned, including fine sand (called silica), unburned carbon, and various trace metals such as arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc; compounds that have potential to be chemicals of concern associated with the Dan River Coal Ash Spill. The Site is less than 10 river miles from Virginia, and USFWS reconnaissance documented ash or ash-like material commingled with native sediment as far as 70 river miles downstream in the days immediately following the Spill.

Three removal actions were conducted related to the Spill. On February 8, 2014, a coal ash bar about 75 feet long and 15 feet wide, which had as much as five feet of ash or ash/sand mix over the natural stream bottom, was identified and subsequently removed (February 11-13, 2014), resulting in the recovery of 15 tons of coal ash and native sediment. Completion of the removal of a coal ash deposit (258 tons of a coal ash and river sediment mixture) occurred on July 7, 2014 at a location approximately two miles downstream from the Site on a native sandbar delta at the mouth of Town Creek's confluence with the Dan River. Removal of 2,500 tons of coal ash

comingled with native sediment in a larger deposit upstream of the Schoolfield Dam in Danville, VA began on May 6, 2014, and was also completed in early July 2014 (although Abreu Grogan Park, where cleanup equipment was mobilized, was closed to public use to support cleanup activities between April 1 - August 1, 2014). In addition to these removal actions, a total of about 466 cubic yards of solids (ash/sediment mix) were removed from the water treatment plants at Danville and South Boston, VA and properly disposed of along with dredged material from the Dan River.

Pursuant to CERCLA NRDAR regulations (43 C.F.R. §§ 11.23-11.25), the Trustees completed a Preliminary Assessment Screen and Determination (PAS) for the Dan River Coal Ash Spill in March, 2014. Based on the information in the PAS, the Trustees determined to proceed with the NRDAR process, provided a Notice of Intent to Conduct a Natural Resource Damage Assessment to the potentially responsible party, Duke Energy, and invited Duke Energy to participate in a cooperative NRDAR process. Duke Energy and the Trustees agreed to enter into a cooperative assessment agreement in order to facilitate the resolution of any claims for natural resource damages¹. See *Funding and Participation Agreement Between [sic] the State of North Carolina, the Commonwealth of Virginia, the U.S. Department of the Interior, and Duke Energy Carolinas, LLC, Concerning Cooperative Natural Resource Damage Assessment, Restoration Planning, and Restoration Implementation Activities for the Duke Energy Dan River Steam Station Coal Ash Pond Site in Rockingham, NC. June 2014.*

Also, in accordance with CERCLA NRDAR regulations (43 C.F.R. § 11.32), in June, 2015 the Trustees released a draft Assessment Plan for the Dan River Coal Ash Spill for public review and comment. A [final Assessment Plan](#) was completed in December 2015. As described in the Assessment Plan, the Trustees defined the Area of Assessment to include the point of discharge from the Facility's storm sewer management pipe in Rockingham County, North Carolina downstream (approximately 77 river miles) to and including Buggs Island Lake (John H. Kerr Reservoir), located in Virginia and North Carolina. In conducting the NRDAR, whenever possible, the Trustees coordinated damage assessment activities with other investigations to satisfy the Trustees' NRDAR objectives in a cost and resource efficient manner. The natural resources and services that were identified in the Assessment Plan to be of interest to the Trustees during the assessment are described further below (see "Summary of Injury to Natural Resources, Restoration Scaling, and Damages Determination").

1.5 Summary of the Proposed Settlement Agreement

A proposed settlement agreement among the Trustees and Duke Energy was documented in a consent decree which was lodged with the federal court and open for a forty-five (45) day public comment period concurrent with the Draft RP/EA. A Notice of Availability for the Consent Decree and draft RP/EA was published in the Federal Register on July 26, 2019. Under the terms of the proposed settlement, the Trustees will provide covenants not to sue to Duke

¹ Although the NRDAR was cooperative with Duke Energy, this RP/EA is solely the work of the Trustees and is not in any way attributable to Duke Energy.

Energy for NRD under CERCLA, the CWA, and applicable state laws. Duke Energy has performed several projects, and agrees to perform an additional restoration project to compensate for the injured, lost, or destroyed resources and services resulting from the Dan River Coal Ash Spill. In addition, as part of the cooperative assessment process for the Dan River Coal Ash Spill NRDAR, Duke Energy has previously reimbursed the Trustees for assessment costs incurred. The proposed consent decree was available for review and comment on the DOJ's Environment and Natural Resources Division website (<https://www.justice.gov/enrd/consent-decrees>) during the public comment period.

1.6 Organization of the Dan River Restoration Plan and Environmental Assessment

Chapter 2 provides a brief summary of the Trustees' assessment of injury to natural resources and their services as a result of exposure to hazardous substances from the Dan River Coal Ash Spill. The Trustees assessed exposure of natural resources to coal-ash related hazardous substances and determined injuries to a variety of natural resources, as a result of that exposure. In addition, the Trustees determined recreational services that were lost as a result of the Spill. As part of NRDAR, the Trustees evaluated the amount of restoration necessary to compensate the public for injuries to these resources for the period between the onset of injury or loss and the resource's or service's return to baseline (DRNRTC 2015).

Chapter 3 describes the restoration alternatives the Trustees identified with public input and evaluated to return the resources injured by the Dan River Coal Ash Spill to their pre-release condition and to compensate for the interim loss pending restoration. This includes a summary of the restoration scoping activities the Trustees conducted in 2014 and 2015 and the criteria with which the Trustees evaluate possible restoration alternatives (43 C.F.R. § 11.82(d) and § 11.93).

Chapter 4 describes the affected environment where the selected restoration alternatives would be implemented and presents the Trustees' analysis of the environmental consequences of the selected restoration alternatives.

Chapter 5 provides the monitoring and project fulfilment, Chapter 6 provides the Trustees' conclusions, and Chapter 7 contains the references identified in this RP/EA.

2.0 SUMMARY OF INJURY TO NATURAL RESOURCES, RESTORATION SCALING AND DAMAGES DETERMINATION

Coal ash is produced through the burning of coal in coal-fired power plants, among other activities. Coal ash includes a number of by-products, such as fly ash, a fine, powdery material, or bottom ash, a coarse and angular ash particle. (See [EPA's website about coal ash](#) for more information). Coal ash is composed of materials remaining after coal is burned, including fine sand (called silica), unburned carbon, and various metals such as arsenic, boron,

cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc. Various samples were collected from the ash pond, ash/native sediment deposit adjacent to the Site, and surface waters in the Dan River and analyzed for ash-related contaminants of potential concern (COPC). The data from these samples indicate that COPC levels (including, but not limited to, arsenic, copper, selenium, iron, turbidity, zinc, and lead) exceeded action and guidance levels for ecological receptors following the Spill (DRNRTC 2014a). Coal ash releases into the environment can create a suite of impacts to natural resources and the services they provide. In aquatic environments, coal ash can impact aquatic organisms through chemical (direct contact with suspended or dissolved hazardous substances in the water column, direct contact with sediments contaminated by hazardous substances associated with coal ash, direct contact with contaminated sediment interstitial pore water, exposure by re-suspended, precontaminated sediments, ingestion of contaminated sediment during foraging or feeding, and/or indirect contact through ingestion of contaminated prey species, including bioaccumulation) exposure.

Natural resources and associated services under the jurisdiction of the Trustees that may have been injured by the Spill include:

- stream and wetland habitat
- surface water and sediment
- aquatic biota
- migratory birds
- human recreational uses

The Trustees conducted NRDAR activities, including: reviewing data from the Spill response efforts to assess injuries to natural resources at and downstream of the Site, to where the coal ash came to be located; preparing a natural resource damage assessment plan; soliciting input from the public and interested stakeholders on the scoping document for restoration planning; and considering restoration project proposals submitted by the public (See Chapter 3.0, Restoration Alternatives, for additional information). For all of these NRDAR activities, the Trustees engaged and/or consulted various experts—biologists, economists, malacologists, ecotoxicologists—for advice on specific components of the assessment and restoration and to ensure the NRDAR was based on appropriate and reliable scientific data and methodologies.

Based on information developed and analyzed by the Trustees, the Trustees determined that the concentrations of hazardous substances in surface water and sediment of Dan River were at levels sufficient to cause injury² to fish and other aquatic biota, as evidenced by exceedances of

² “Injury” as defined in CERCLA NRDAR regulations means “a measurable adverse change, either long- or short term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil or release of a hazardous substance, or exposure to a product of reactions resulting from the discharge of oil or release of a hazardous substance. As used in this part, injury encompasses the phrases ‘injury,’ ‘destruction,’ and ‘loss.’” 43 C.F.R. § 11.14 (v).

freshwater aquatic life criteria and consensus-based probable effects concentrations for freshwater ecosystems (DRNRT 2014a).

In the damages determination phase of the NRDAR process, the Trustees identified and used procedures to determine the type and magnitude of restoration needed to bring injured natural resources to the appropriate baseline condition and to address the public's loss of natural resource services from the time of release to restoration to baseline (the "interim loss") (DRNRT 2015). The scale (or size) of the restoration action(s) should be that which provides the value to adequately offset the natural resource and service losses. The process of determining the size of restoration is called restoration scaling. Restoration scaling requires a framework for quantifying the losses and for quantifying the benefits of restoration so the losses and benefits can be compared. For restoration scaling, the Trustees evaluated two decision support models: an *ecological service model* and a *human-use services model*. The ecological service model evaluates the ecological service losses associated with the Spill and the ecological service benefits of selected restoration projects to offset the ecological service losses. The human-use services model evaluates the fishing and outdoor recreation losses associated with the Spill and the benefits of restoration projects that offset the human use losses.

The ecological service model incorporated a Habitat Equivalency Analysis (HEA) that evaluated the interim losses and the expected service benefits of restoration projects—the same restoration projects selected by the Trustees in this Final Plan. HEA is a service-to-service or resource-to-resource approach to natural resource valuation that can account for changes in baseline³ services while estimating interim losses of services. Baseline service losses include the loss of resources as compared to their baseline condition (i.e., the condition they would be in now had no contamination occurred). Interim losses include the losses over the time when resources are in an impaired condition and less available to the public. The fundamental concept in HEA is that compensation for lost ecological services can be provided by restoration projects that provide comparable services.

For purposes of the Dan River Coal Ash Spill injury assessment, the Trustees focused the estimate of ecological lost services on benthic invertebrates, fish, and mussels as representative resources for the aquatic system. Changes to the level of benthic invertebrates accounted for

³ "Baseline" is defined in CERCLA NRDAR regulations as "the condition or conditions that would have existed at the assessment area had the discharge of oil or release of the hazardous substance under investigation not occurred." 43 C.F.R. § 11.14 (e).

removal^{4,5}; changes to the level of fish accounted for potential impacts from the exceedance of selected EPA screening criteria for arsenic and selenium in surface water⁶, and changes to the level of mussel services accounted for potential impacts from the exceedance of selected EPA screening criteria for arsenic and selenium in sediment.⁷

Baseline for each resource was estimated using existing data. The characterization of the baseline level of ecological services for benthic invertebrates comes from the 2012 Dan River Summary for Duke Energy's Belews Creek Steam Station (Duke Energy 2013) and data provided by the State of North Carolina on a Benthic Invertebrate Index developed for various locations on the Dan River. The baseline level of fish service is based on the total number of species collected from fish community sampling that Duke Energy has conducted during 2014 and 2015 on the Dan River (Duke Energy 2016) as well as the historical fish community data that has been conducted on the Dan River as reported in Rohde et al. (2001) and Rohde et al. (2003). The baseline level of ecological services for mussels comes from the 2015 Mussel Survey (Alderman and Alderman 2014) where the baseline level of mussel services is specified as the average abundance (number of mussels) across all sites Alderman and Alderman (2014) sampled in each reach.

The ecological service model incorporated the spatial extent of coal ash deposited throughout the affected area using data from the Sediment Transport Model (Altinakar et al. 2015) developed for the Spill and other data sources.⁸ For purposes of injury assessment, the affected area of the Dan River was sub-divided into four reaches, based on geomorphic and fate and transport characteristics of the ash (i.e., whether an area acted as a "sink" for coal ash or whether it was a "scour" area). The affected area was also characterized for the different injury

⁴ A Sediment Transport Model was used to develop an estimate of the relative ash covering, the exposure pathway to suspended or dissolved hazardous substances, in defined river reaches (Altinakar et al. 2015). Field based confirmation of ash deposition was also performed.

⁵ According to the May 2014 Administrative Settlement Agreement and Order on Consent for Removal Action, Duke Energy dredged a total of 3,062 cubic yards (or a total of 1.90 acre-feet of ash removal) in three different locations upstream of Schoolfield Dam (USEPA 2014).

⁶ Surface water grab samples were collected by Duke Energy, USEPA (Superfund Technical Assessment and Response Team and Science and Ecosystem Support Division [SESD]), NCDENR, and VADEQ. At a subset of sediment sampling locations (with sufficient water depth), USEPA Region 4's SEDS team collected water column samples (including a minimum of a surface and sediment/water interface grab sample). Results were compared to federal ambient water quality standards to determine areas affected by exceedances.

⁷ Sediment samples were also collected from the river by USEPA at intervals along the Dan River in areas immediately downstream (including through Danville, VA) and then at greater spatial intervals throughout the remaining riverine portion of the Dan River system. Results were compared to USEPA screening levels for selenium and arsenic to determine areas affected by exceedances.

⁸ DRNRTC 2015, HDR 2015, surface water quality samples collected by Duke Energy, USEPA, NCDEQ, and VADEQ, sediment quality samples, pre-and post-spill benthic and fish community structure data including a post spill, mussel survey (Alderman and Alderman 2014), and fish-tissue metals concentrations.

mechanisms—ash removal (Duke Energy dredged a total of 3,062 cubic yards in three different locations upstream of Schoolfield Dam) and exposure to hazardous substances in the ash. The temporal nature of the exposure and duration of the injury also was accounted for based on the pathway of the injury. For purposes of the assessment, the duration of injury to benthic invertebrates caused by ash removal was considered to be 2 years (2014-2015), whereas fish was 5 years (2015-2020) and mussels was 4 years (2016-2020) for exposure to arsenic and selenium.

The ecological services model used the Mayo Trust Parcels (Upper Trust Parcel: 116.72 acres, Lower Trust Parcel (east bank): 168.33 acres and Lower Trust Parcel (west bank): 185.98 acres) and the Pigg River Dam Removal as a proposed restoration projects to offset the ecological service losses to aquatic resources—benthic invertebrates, fish and mussels. Acquisition and conservation of the Mayo Trust parcel would benefit aquatic services by avoiding increased sedimentation, loss of leaf litter, temperature changes, canopy loss, and nutrient cycling. Ecological benefits associated with Pigg River Dam Removal include restoration of 2.2 miles of aquatic instream habitat impounded upstream of the Power Dam for the federally and state listed Roanoke logperch and smallmouth bass [and] another mile upstream...and five miles downstream of the dam will be improved by increased complexity of the instream habitat, vegetation, and “competency to transport sediment.” In addition to the 3.2 upstream and five miles downstream, the partial removal will improve the channel habitat, stability, and complexity of the remaining 45 mile Pigg River segment to the Leesville Reservoir.

For purposes of the Dan River Coal Ash Spill injury assessment, the Trustees focused their estimate of recreational lost services on fishing (“angling”) and outdoor recreation. For angling, the human use model analysis focused on the number of fishing trips lost (i.e., not taken) as a result of the fish consumption and contact advisories issued for the Dan River following the Spill. The outdoor recreation component of the human use model assessed the losses in human-use services associated with the contact advisories issued for the Dan River in North Carolina following the Spill-- between February 12 and July 22, 2014. Thus, the duration of the recreation injury was one year-2014. Relatedly, the Abreu Grogan Park in Danville, NC was closed to public use while cleanup equipment was mobilized and during the removal of a coal ash deposit in the river in the vicinity of the Schoolfield Dam between May 6 and August 1, 2014. The Abreu Grogan Park is the only access point on the Dan River between the Dan River Steam Station dam in Eden, NC and the Schoolfield Dam in Danville, VA.

The human use model used improvements to the amenities at Abreu Grogan Park, including a new fishing pier, as a proposed restoration project to offset fishing losses for purposes of the assessment. For outdoor recreation, proposed restoration projects for purposes of offsetting lost trips were additions to Abreu-Grogan Park (i.e., new bathroom facility); additions of Mayo River Trust Parcels; and two new canoe launches on the Dan River.

Benefit transfer was used to evaluate the lost recreational uses as a result of the Spill and the benefits from proposed restoration projects for recreation. Benefit-transfer is a widely accepted economic methodology (*see also* 43 C.F.R. § 11.83) that uses existing recreational use

preference information from the economics literature to identify how changes in environmental quality or site characteristics could affect a recreational user's well-being (e.g., anglers). The benefit-transfer model combines this preference information with data on the potentially affected population, information on potential substitute sites, and information on the number of trips taken to the affected area and set of potential substitute sites. In general, the benefit-transfer model attempts to evaluate recreational use behavior (fishing and general outdoor use) under With- and Without-Release conditions to estimate the losses from the coal ash Spill, and With- and Without-Restoration to estimate the benefits of restoration.

Additionally, the Trustees evaluated the results of ecological services and human-use models using different scenarios to account for uncertainties and data gaps (i.e., a "sensitivity analysis") for both the injury and the benefits from the proposed restoration projects. After evaluating the data from the Spill as well as the long-term monitoring data, exploring different scenarios for the ecological service loss and human use models, and consulting with various experts, the Trustees are confident that the selected restoration projects compensate for the injured natural resources and lost services as a result of the Spill.

3.0 RESTORATION ALTERNATIVES

Restoration of resources injured and services lost by the Spill is the goal of the Dan River Coal Ash NRDAR process. The purpose of the actions identified in this RP/EA is to restore, rehabilitate, replace, or acquire the equivalent of natural resources that were injured or destroyed and recreational use that was lost because of the Spill pursuant to the requirements of applicable federal and state laws and regulations.

3.1 Restoration Scoping

In October 2014, the Trustees released a Scoping Document for Restoration Planning (Scoping Document) (DRNRTC 2014b). The Scoping Document provided information on the Spill, the potential natural resource injuries resulting from the Spill, restoration project concepts for the resources affected by the Spill, and an explanation of the restoration planning process, including restoration project eligibility and evaluation criteria. Review of the projects described in the Scoping Document promoted public engagement early in restoration planning and provided the public an opportunity to show support for the types of projects under consideration to restore natural resources and their services or provide other restoration project ideas to the Trustees. Feedback from the public showed great support for public river access, land protection and conservation projects such as the Mayo Tract as well as dam removal and other projects that protect water quality in the river. A Restoration Scoping Response Summary of the feedback received by the Trustees on the Scoping Document for Restoration Planning was finalized in December 2014 (DRNRTC 2014c). The restoration scoping process led to a final document that provided a comprehensive list of potential restoration projects and existing restoration opportunities in the Dan River watershed area, partnerships with stakeholders (e.g., conservation organizations and river users), more public engagement, and identification of potential concerns with possible restoration actions (DRNRTC 2014b). For

purposes of this Restoration Plan, the Trustees are using the same *criteria* for evaluation of restoration alternatives as were used in the Scoping Document, as described in the next section. The Scoping Document also identified *potential restoration alternatives* to guide the restoration planning process, which are summarized in Section 3.4.

3.2 Restoration Alternatives Evaluation Criteria

Eligibility criteria for evaluation of restoration alternatives are outlined in the CERCLA NRDAR regulations (43 C.F.R. § 11.82(d)). The Trustees used additional case-specific alternative selection criteria to assess the potential restoration alternatives as follows:

- Nexus – the alternative has a connection to the restoration, rehabilitation, replacement, and/or acquisition of the equivalent injured natural resources or lost services.
- Relevance – the alternative effectively meets restoration goals and objectives.
- Cost Reasonableness – the cost of the proposed restoration alternative is reasonable in relationship to the injury, and benefits to the injured resources can be quantified; opportunities to share costs with other organizations and/or agencies may be available and are considered.
- Measurable – an alternative delivers tangible and specific resource restoration results that are identifiable and measurable.
- Efficacy – it is likely that a restoration alternative will be successful based on consideration of future operation and maintenance requirements and vulnerability of the alternative to natural or human-induced stresses following implementation.
- Legality – the restoration alternative complies with applicable/relevant Federal, State, and local laws and regulations.
- Ecological leverage – the restoration alternative promotes other environmental benefits, avoids collateral injury to natural resources as a result of implementation, and is not subject to an independent, prior obligation.
- Compatibility – the alternative is compatible with the surrounding land use.

3.3 Potential restoration alternatives identified during Restoration Scoping

Through consideration of the criteria described above and the natural resources and associated services affected by the Spill (See Section 2.0), the Trustees identified the following categories of restoration alternatives appropriate for consideration to offset injuries related to the Spill:

- Avoided Habitat Loss via Land Acquisition/Protection
- Restoration of In-stream Habitat/Fish Passage
- Restoration of Riparian and Wetland Habitat
- Rare and Nongame Species Restoration
- Improve quality of fishing experience
- Expand river-centered opportunities for public recreation and wildlife viewing

The Trustees identified alternatives for restoration of natural resources and recreational opportunities based on an evaluation of the criteria and types of restoration alternatives described above. A description of the selected restoration alternatives and their environmental benefits are described in Section 3.4.

3.4 Selected Restoration Alternatives (and other alternatives considered but eliminated)

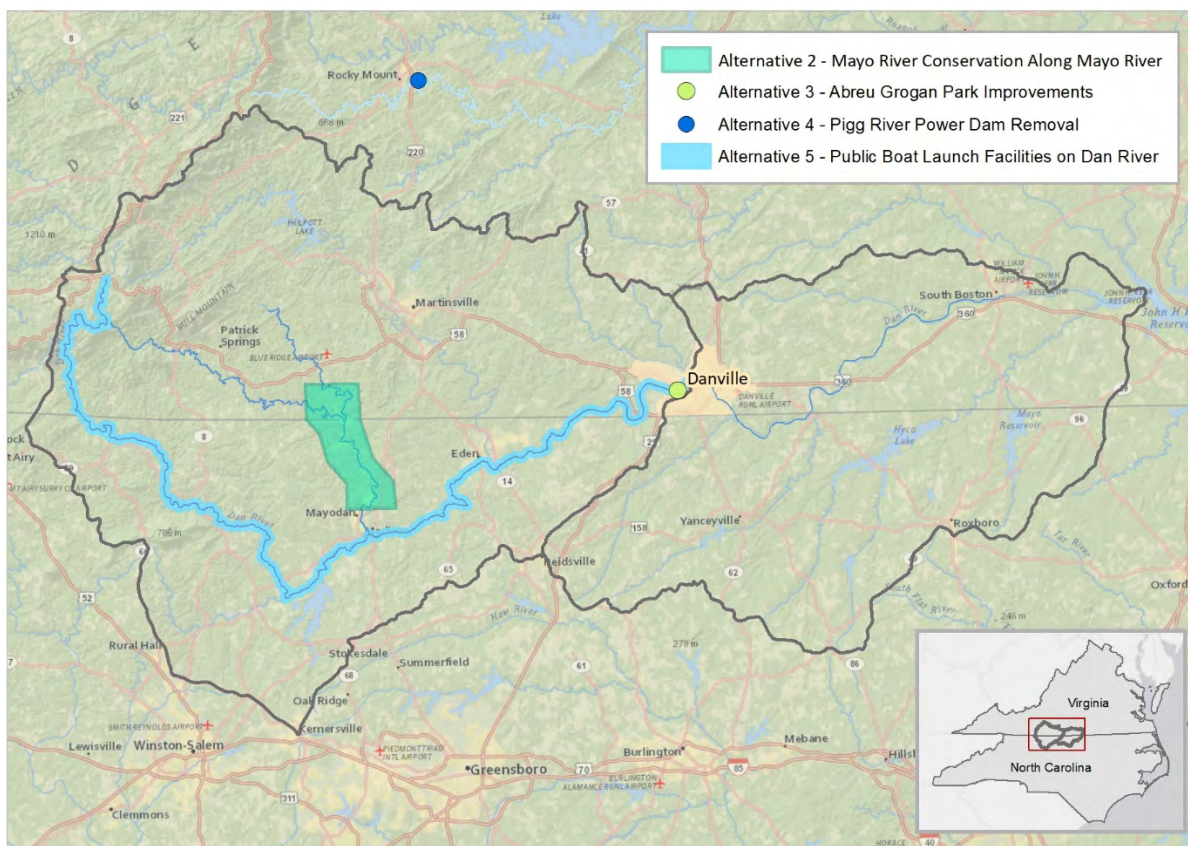
As a result of the public feedback generated by the Trustees' restoration scoping activities, Duke Energy pursued implementation of several of the restoration alternatives. Consequently, in this document, the Trustees are evaluating the suitability of alternatives (some of which have already been implemented by Duke Energy and one other that has yet to be implemented) to offset injuries to natural resources and services resulting from the Spill. Table 1 indicates the category or categories of restoration satisfied by each restoration alternative to compensate for natural resource injury and lost recreational use in the Dan River and highlights the completion status of the various alternatives. Table 1 also identifies the Trustees' selected alternative restoration projects that will accomplish the goal of restoring, rehabilitating, replacing and/or acquiring the equivalent of those natural resources, and the services those resources provide. Figure 2 illustrates the locations of each of the selected alternatives completed and area of focus for those in progress.

Table 1. Summary of Natural Resource and Service Benefits of Restoration Alternatives

Restoration Alternative	Restoration Categories	Natural Resources and Services Benefited	Status
1 - No Action	<ul style="list-style-type: none"> • None 	None	Considered, but eliminated from further analysis
2 - Mayo River Conservation (selected)	<ul style="list-style-type: none"> • Avoided habitat loss via land protection • Expand river centered opportunities for public recreation/wildlife viewing • Improve quality of the fishing experience 	<ul style="list-style-type: none"> • habitat • surface water and sediment • aquatic biota • migratory birds • human uses 	618.72 acres conserved and transferred to North Carolina and Virginia State Parks; up to 64.403 additional acres remaining to be acquired (in progress)
3 - Abreu Grogan Park Improvements (selected)	<ul style="list-style-type: none"> • Improve quality of fishing experience • Expand river-centered opportunities for public recreation and wildlife viewing 	<ul style="list-style-type: none"> • human uses 	Completed
4 - Pigg River Power Dam Removal (selected)	<ul style="list-style-type: none"> • Restoration of In-stream Habitat/Fish Passage • Restoration of Riparian and Wetland Habitat • Rare and Nongame Species Restoration 	<ul style="list-style-type: none"> • habitat • surface water and sediment • aquatic biota • migratory birds • human uses 	Dam demolition completed; environmental monitoring ongoing

5 - New Public Boat Launch Facilities on the Dan River (selected) 6A – Rare and Nongame Species Restoration (Mussels) 6B – Rare and Nongame Species Restoration (Roanoke logperch) 7 – Water Quality Improvements (SL-6 Projects)	<ul style="list-style-type: none"> Expand river centered opportunities for public recreation/wildlife viewing/fishing experience 		
	<ul style="list-style-type: none"> Improve quality of fishing experience Expand river-centered opportunities for public recreation and wildlife viewing 	<ul style="list-style-type: none"> human uses 	Planning in progress
	<ul style="list-style-type: none"> Rare and Nongame Species Restoration 	<ul style="list-style-type: none"> aquatic biota 	Community mussel restoration strategy considered but eliminated from further analysis
	<ul style="list-style-type: none"> Rare and Nongame Species Restoration 	<ul style="list-style-type: none"> aquatic biota 	Considered, but eliminated from further analysis
	<ul style="list-style-type: none"> Restoration of In-stream Habitat/Fish Passage Restoration of Riparian and Wetland Habitat 	<ul style="list-style-type: none"> aquatic biota 	Considered, but eliminated from further analysis

Figure 2. Locations of Selected Restoration Alternatives



Alternative 1: No Action

Under this alternative, no restoration activities beyond what were presented in the 2014 [EPA-approved response and cleanup activities](#) would be conducted at the Site. The underlying assumption of this alternative is that natural resources and the services they provide will recover over time through natural attenuation. This alternative is appropriate if/when no additional restoration projects are necessary to restore, rehabilitate, replace, and/or acquire the equivalent of the injured natural resources. This alternative has no cost.

The no action alternative is not appropriate for the Dan River Spill given that interim losses to natural resources and the services they provide (as evidenced by recreational and fish consumption resources and park closures) cannot be addressed through natural attenuation.

Alternative 2: Mayo River Conservation (selected)

This restoration alternative was selected and involves the acquisition and conservation of up to 618.72 acres of floodplain and riverbank properties along the Mayo River and ultimate transfer to the Mayo River State Parks in North Carolina and Virginia for long term stewardship and conservation in perpetuity as part of the North Carolina and Virginia Mayo River State Parks,

respectively. Mayo River corridor parcels in North Carolina were frequently mentioned in responses to the Trustees' restoration scoping request in 2014. The acquisition and conservation of this corridor as part of the Mayo River State Park protects significant aquatic habitat with high quality water and with at least 10 rare and listed aquatic species and adjacent terrestrial natural heritage features. This addition to the state parks would allow greater access and safety for the public to over 10 miles of the Mayo River for increased river-based recreation and fishing, as well as typical state park camping, hiking, and environmental education. In 2007, the Virginia General Assembly authorized a study of the feasibility of creating a state park on the North and South Forks of the Mayo River in Henry County ([VADCR 2007](#)). Investments in land and facilities are an identified need and interstate connectivity of park lands and waters would increase both the recreational and ecological impact of these investments.

This selected alternative includes: Duke Energy funded the acquisition of the 340.317 acre Lower Trust Parcel, including the corresponding 3 miles of river corridor, and transferred title to North Carolina State Parks for long term stewardship and conservation in perpetuity as part of the Mayo River State Park; Duke Energy funded the acquisition of 214 acres of real property along the Mayo River in Henry County, VA, and transferred title to VADCR for long-term stewardship and conservation in perpetuity as part of Virginia's Mayo River State Park.

This alternative includes additional Mayo River land conservation up to 64.403 acres of floodplain and riverbank land along the Mayo River and conveyance of ownership of the land to the State of North Carolina for conservation as part of North Carolina's Mayo River State Park.⁹ The State will manage the property for long term stewardship and conservation in perpetuity. Conservation of such property within the state park system of North Carolina provides ecological and recreational benefits: preserving high-quality habitat for threatened or rare terrestrial and aquatic species, and providing public access and recreational opportunities for anglers, hikers, paddlers, and other outdoor recreationists.

The Environmental Assessment only applies to a portion of Alternative 2 (i.e., acquisition and conveyance to the State of North Carolina of approximately 64.403 acres total of Mayo River riverplain and floodplain to be managed for long term stewardship and conservation in perpetuity). This action is a selected alternative for this Final RP/EA because it meets the all criteria identified by the Trustees for a good restoration project to address the injuries caused by the Spill. This alternative is expected to increase habitat quality and quantity, promote habitat connectivity, create new public use opportunities, and benefit public natural resources within the Dan River watershed. Acquisition and conservation of floodplain and riverbank properties along the Mayo River will protect miles of significant river habitat with at risk, rare and/or endangered aquatic species, adding greater access for the public to river-based recreation.

⁹ Duke Energy acquired and transferred this property to the State of North Carolina on July 23, 2019. Thus, this alternative is now complete. However, to avoid confusion by remaining consistent with the Draft RP/EA, this alternative is retained for the NEPA analysis in this Final RP/EA.

Alternative 3 - Abreu Grogan Park Improvements (selected)

This selected alternative involves improvements to the three-acre Abreu Grogan Park in Danville, VA (Pittsylvania County), which is the only access to the 14-mile section of the Dan River designated as a Virginia Scenic River. As described above in Section 1.4, Abreu Grogan Park was closed April 1 - August 1, 2014 during the response to the Spill as it was used as a staging ground for removal of coal ash and contaminated sediment from Dan River.

Improvements to add amenities to Abreu Grogan Park and increase recreational access to the river and use of the park by a broader population have been completed by Duke Energy and are detailed in Appendix A. New amenities include a courtesy dock, a fishing platform, a restroom building and an information kiosk. Handicapped accessible parking and sidewalks have been added to enable access to all of these park amenities. Other improvements to the park included a new headwall to stabilize the culvert, addition of rip-rap for river bank stabilization and relocation of the picnic table and grill. This selected alternative has been fully implemented and the park was re-opened on May 26, 2016. The improvements to the park address recreational losses as a result of the closure of the park during the response effort.

Alternative 3 is a selected alternative for this Restoration Plan because it meets the direct nexus criteria identified by the Trustees for a good restoration project. Abreu Grogan Park Improvements addresses the lost recreational opportunities when the park was closed to public use to support cleanup activities.

Alternative 4 - Pigg River Power Dam Removal (selected)

Constructed in 1915 for power generation, the defunct Power Dam measured 25 feet high by 204 feet long and impounded 60 acre-feet of water over 25 acres. The Pigg River Power Dam Removal project is located just upstream of the Route 713 bridge over the Pigg River in Franklin, VA. The USFWS worked with the owner, Friends of the Rivers of Virginia (FORVA), and Franklin County, Town of Rocky Mount, VADEQ, Virginia Department of Game and Inland Fisheries and others to remove the center section of the dam. The purpose of this restoration alternative is to support recovery of the Roanoke logperch (*Percina rex*) through aquatic habitat restoration, fish passage, and restoration of aquatic connectivity within the Pigg River ecosystem. Duke Energy provided the funding to FORVA on August 23, 2016 and Power Dam breaching and removal was completed on September 27, 2016. Work related to the breaching included the cutting and removal of trees downed by down cutting of legacy reservoir sediment to prevent additional bank instability during the natural channel formation process.

This project removed the last impediment to fish passage within a 7- mile reach of the Pigg River from the headwaters downstream to Leesville Reservoir. The project restored 2.2 miles of aquatic instream habitat impounded upstream of Power Dam for the federally and state listed Roanoke logperch and other nongame and game fish such as smallmouth bass (*Micropterus dolomieu*). Another mile upstream of the impoundment for a total of 3.2 miles above Power Dam and 5 miles downstream of the Dam are in the process of being improved by the river's competency to transport sediment, increasing the complexity of instream habitat

and facilitating the reestablishment of riparian vegetation. The remaining 45-mile river segment downstream to Leesville Reservoir is also beginning to improve with regards to channel habitat, stability, and complexity through restored sediment transport capacity. In addition to on-going physical and biological monitoring, signage was constructed to provide the public assistance in interpreting the historic significance of the powerhouse and remnants of the Pigg River Power Dam. Other benefits of the project include the restoration of flood attenuation, public infrastructure protection for the Rocky Mount Wastewater Treatment Plant and the Route 713 Bridge, removal of a public safety and boating hazards, and the future establishment of a public access area and county park for recreational fishing and boating. Implications for the endangered Roanoke logperch had been extensively evaluated (USFWS 2016) and endangered species consultations and all applicable Federal, state and local regulatory reviews were completed prior to implementation. Additional details regarding the Power Dam removal and benefits are available at the [USFWS – Virginia Field Office website](#) and are included in Appendix B.

Alternative 4 is a selected alternative for this Restoration Plan because it meets the Trustees' restoration goals and objectives criteria identified by the Trustees to address the injuries caused by the Spill. Breaching the Pigg River dam restores river habitat, improves water quality, re-establishes fish movement, and enhances fishing and recreational boating opportunities.

Alternative 5: Establishment of Public Boat Launch Facilities on the Dan River (selected)

As described in Section 1.4, the Spill caused a loss of recreation as a result of fishing closures along the Dan River during the Spill and Spill response. Additionally, public responses to the Trustee's restoration scoping indicated that limited access in the Dan River impedes recreational use and enjoyment of the resource. This alternative includes the establishment of new public access location(s) within the upper Dan River Basin to address recreational losses from the Spill by increasing access. The boat launch(es) may accommodate either motorized or non-motorized boats. The Trustees shall identify a maximum of one motorized boat access location or a maximum of two non-motorized boat access locations.

Alternative 5 is a selected alternative for this Restoration Plan because it meets all criteria identified by the Trustees for addressing the injuries caused by the Spill.

Alternative 6A: Rare and Nongame Species Restoration (Mussels)

The Trustees considered an approach for captive propagation and release of freshwater mussels into the wild, with the goal of developing connected, self-sustaining populations in North Carolina and Virginia. The approach is intended to advance conservation of the federally endangered James spinymussel. Furthermore, while not currently listed as threatened and endangered, many non-listed "at-risk" species also are imperiled and would benefit from strategies considered. In particular, four levels of species restoration, augmentation, expansion, reintroduction, and establishment were identified. In North Carolina, only augmentation and expansion options within the state were evaluated, whereas all levels were

considered in Virginia based on existing policies and opportunities. Species experts were consulted to identify species-specific and location-specific opportunities to advance restoration options. The primary determination of a suite of species to be restored at a specific reach was based on species accounts, ability to propagate the species under captive conditions, the number of specimens available, and the current information on a species' life history.

Ultimately, while the Trustees deem a community mussel restoration approach to be both important to consider and likely to deliver substantive benefits capable of offsetting natural resource injuries, specific timing and policy considerations limited the feasibility of implementing these efforts. In particular, the state and federal listing status of several of the species would necessitate policy approvals and designations for which the timing and outcome were not well aligned with the restoration planning and delivery effort for the Dan River NRDAR process. Accordingly, Alternative 6A, the community mussel restoration project is not a selected restoration alternative.

Alternative 6B: Rare and Nongame Species Restoration (Roanoke logperch)

The Roanoke logperch, a federally endangered fish, is known to be present from the mainstem of the Dan River upstream of the Site, as well as in two tributaries to the Dan River downstream of the Site. Historically, populations of Roanoke logperch were likely widespread throughout tributaries and the mainstem of the Dan River. Declines are attributed to sedimentation and pollution which lead to decreased water quality as well as population fragmentation from dams and other barriers to passage. Captive propagation (for which successful rearing techniques are known) and release and/or translocation of Roanoke logperch individuals into suitable habitat are tools for restoring diversity and abundance. The Trustees considered potential opportunities for Roanoke logperch restoration in North Carolina and Virginia as identified by species experts.

In Virginia, Roanoke logperch populations are generally more stable than other locations throughout the species' range; however, the addition of new individuals, and thus more genetic variation, to enhance population viability (or augmentation) is desirable. The Trustees evaluated a restoration project intended to facilitate: 1) an increase in genetic diversity and the genetically effective population size within the Goose Creek population; and 2) a decrease in genetic divergence between the Goose Creek and Roanoke River populations. In North Carolina, Roanoke logperch populations are vulnerable and unstable due to low densities and both limited and fragmented range. Accordingly, based on the low density of Roanoke logperch in candidate streams in North Carolina, the Trustees evaluated a restoration approach that entailed demographic augmentation (to boost the number of individuals to achieve effective population targets) through release of captive reared individuals. Candidate sites were identified based on field-based reconnaissance and screening of candidate areas by species experts since 2009.

Like the community mussel restoration approach (Alternative 6A), the Trustees considered the restoration opportunities for Roanoke logperch that were considered to be important and

meaningful in terms of the ability to offset potential natural resource injuries; however, again the timing of policy tools and other designations precluded further consideration by the DRNRTC. Furthermore, one restoration alternative (Alternative 4) has been determined to provide significant uplift for the Roanoke logperch and a higher immediate priority for Roanoke logperch conservation given potential for this action to support recovery efforts for the species.

Alternative 7: Water Quality Improvements via Supplemental Support for Virginia Agricultural Cost Share Program

Watershed improvement projects to address non-point source pollution and excessive sedimentation to Virginia waterbodies have been identified via the VADCR's Division of Soil and Water Conservation. Specifically, the number of proposed cost share projects addressing Stream Exclusion with Grazing Land Management (SL-6) practices typically exceed available funding. The Trustees considered whether implementation of projects that would otherwise be unfunded could result in sediment and non-point pollution reduction sufficient to offset natural resource injuries associated with the Dan River Spill.

This alternative was not identified for further consideration given that supplemental funding support for SL-6 projects has been realized via alternative funding sources (above and beyond the original cost share program).

The overall objective of the restoration process is to make the environment and public whole for injuries to natural resources and/or service losses resulting from the Spill. To meet that objective, the benefits of restoration actions must be related, or have an appropriate nexus, to the natural resource injuries and losses. To achieve this fundamental objective, the Trustees are selecting restoration alternatives 2, 3, 4 and 5 to compensate the public for the natural resource injuries and lost recreation as a result of the Spill. Each alternative was evaluated against the same restoration priorities and factors described above. The Trustees believe that these alternatives represent a cost-effective and beneficial means by which to restore or replace the injured natural resources and the services they provided. These projects have the capacity to improve water quality, to provide improved habitat for a diversity of wildlife, and to enhance the recovery of endangered and rare species. Additionally, they will provide public river access for recreational activities including bird watching, nature photography, hiking, fishing, kayaking, picnicking and other uses; and create a link between local walking/biking trails and the nearby local or state parks.

4.0 ENVIRONMENTAL ASSESSMENT

This Chapter presents pertinent information about the affected area of the selected restoration project alternatives that have not been completed and the Trustees' analysis of the environmental consequences of implementing those projects. The Environmental Assessment only applies to Alternative 5, Boat Ramps, and a portion of Alternative 2, acquisition and conveyance to the State of North Carolina of approximately 64.403 acres total of Mayo River riverplain and floodplain to be managed for long term stewardship and conservation in

perpetuity.¹⁰ At the time of the Draft RP/EA, Alternatives 3 and 4, and a portion of Alternative 2, had been implemented by Duke Energy and thus are outside the scope of this Environmental Assessment.

4.1 Affected Environment

This section presents a brief description of the physical, biological, and cultural environment for the waterways and ecosystems adjacent to and in the vicinity of the selected alternatives. The Dan River basin encompasses 3,739 square miles and 11,123 linear stream miles within North Carolina and Virginia. The affected area includes those lands immediately adjacent to the river that would be affected by proposed boat ramp(s) and floodplain and riverbank properties along the Mayo River in North Carolina and Virginia that qualify for long term stewardship and conservation in perpetuity as part of the North Carolina and Virginia Mayo River State Parks.

4.1.1 Physical Environment

4.1.1.1 Surface Water

The Dan River flows for 50.5 miles through Stokes County, NC and 39.5 miles through Rockingham County, NC. Major tributaries entering the Dan River along this reach include the Mayo and Smith rivers. Alternative 2 includes portions of the Mayo River in Henry, VA and Rockingham County, NC. The potentially affected surface water environment, at a minimum includes, the surface water pathway in the Dan River from the point of discharge from the Facility's storm sewer management pipe in Rockingham, NC downstream (approximately 77 river miles) to and including Buggs Island Lake (John H. Kerr Reservoir), located in Virginia and North Carolina. Likewise, it also includes the surface water environment in proximity to planned future restoration projects including the mainstem Dan and Mayo Rivers upstream of the Spill site, including surface waters in the counties of Stokes and Rockingham, NC. In total, the potentially affected surface water environment encompasses waters in the counties of Rockingham, Stokes, Caswell, Person, Granville, Vance, and Warren NC and Pittsylvania, Halifax, Charlotte, and Mecklenberg VA.

The presence of impaired waters in the Dan River Basin without high levels of development indicates a historic degradation of water quality conditions in the river and its tributaries and/or persistent agricultural or forestry non-point source pollution problems (PTRC 2012a). Over 20% of the Dan River Basin's assessed waters are listed as impaired with high levels of turbidity, poor ecological habitat conditions, and low dissolved oxygen levels as leading causes. However, over half (55%) of these impaired waters in the Dan River Basin are listed as failing to meet federal water quality standards for E. coli or fecal coliform bacteria, an indication of the presence of fecal material from human, livestock, and/or wildlife sources (PTRC 2012a). There is a Total Maximum Daily Load (TMDL) for E. coli on the Dan River in Virginia that recommends

¹⁰ As stated earlier, this acquisition and transfer was completed by Duke Energy on July 23, 2019. However it is retained for the NEPA analysis in this Final RP/EA.

reductions in sources of up to 40% from wildlife and agricultural sources (VADEQ 2007). North Carolina has adopted a similar TMDL for fecal coliform bacteria on the Dan River Basin to address their sources of *E. coli* contributing to water quality degradation as identified and assessed by VADEQ (PTRC 2012a). North Carolina Division of Water Resources has developed a TMDL for turbidity impairments in the Dan River that has determined that reductions in non-point sources of sediment pollution will be necessary to restore supportive water quality conditions to those waters.

4.1.1.2 Regional Geology and Soils

The affected area is located in the Piedmont region of North Carolina and Virginia. The geography is rolling, gentle hills and flat valleys with elevation ranging from about 300–400 feet (90–120 meters) in the east to over 1,000 feet (300 meters) in the west. Geology and soils are characterized by the Piedmont Belt, Triassic Basin, and Milton Belt that are defined as occupying an area of rocks that have similar features and come from the same point in geologic history (PTRC 2012b). According to the 2012 Eden Area Watershed Assessment:

Soils formed from the poorly-draining sedimentary rock of the Triassic Basin overlap with the soils formed from the more porous but more erodible metamorphic rock of the Piedmont Plateau (including the Inner Piedmont, Western Piedmont and Milton Belts) creating a complex landscape. The soils derived from the Triassic Basin ecoregion tend to be high in clay with low permeability and moderate to high shrink-swell potential, such as the Clover or Mayodan soils group. Soils derived from the Triassic Basin include Ayersville (not hydric, slightly erodible), Leaksville (all hydric, moderately to highly erodible), Clover/Mayodan (not hydric, moderately erodible), Spray (not hydric, slightly erodible) and Stoneville (not hydric moderately erodible) (US Department of Agriculture [USDA], 2012). Due to weathering processes the soils derived from the Triassic Basin geology are often located on top of the ridges while the older, more erodible metamorphic derived soils exposed on the sides of the slopes. The alluvial soils along the Smith and Dan Rivers are thus formed from a weathered material from sedimentary, igneous and metamorphic rock from surrounding uplands. The soil composition of the watershed ensures that the receiving waters will be extremely prone to sediment pollution.

4.1.1.3 Climate

Climate is humid subtropical characterized by mild winters, long pleasant periods of spring and fall, and warm summers. Average annual temperature is 59 degrees, average annual rainfall is 41 inches, and average annual snowfall is 8 inches.

4.1.2 Biological Environment

4.1.2.1 Terrestrial and Aquatic Habitat

The upper portion of the Dan River basin in North Carolina (including the Dan River mainstem) is primarily forested, but a significant portion is also in use as cultivated cropland and pasture (PTRC 2012a). The affected area is typically characterized by a low slope freshwater perennial river channel containing a heterogenous substrate of sand, gravel, and cobble bordered by low banks of riparian forests that grade up into upland or floodplain hardwood forests, depending

on valley type and slope. Less than 50% of the floodplains have been converted to agriculture or pasture. Natural Heritage inventories conducted in Stokes and Rockingham, NC were able to identify nineteen unique natural areas that are significant on the regional, state and national level. These characteristics and relatively low human disturbance levels maintain high biological diversity and ecological function from natural resources in the Dan River Basin.

4.1.2.2 Fish and Wildlife

A variety of endemic game and non-game mammals, birds, reptiles, amphibians, invertebrates, freshwater fish, crustaceans and fresh water mussels occur in the Dan and Mayo River basins. Wildlife species known to occur within the Roanoke River basin, of which the Dan and Mayo rivers are a part of, includes 18 mammal species, 41 species of amphibians/reptiles, and 143 species of birds. Wildlife in the vicinity of the selected Mayo River conservation project include managed small and large game species, such as white-tailed deer and wild turkey, and non-game species common to the region, including a variety of non-game animals, such as mussels, amphibians, aquatic invertebrates and upland, riparian, and wetland birds. Fishing pressure is relatively light, but fishing opportunities exist for sunfish, largemouth bass, smallmouth bass and catfish.

Common game animals include black bear (*Ursus Americanus*), white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), American crow (*Corvus brachyrhynchos*), groundhog (*Marmota monax*), ruffed grouse (*Bonasa umbellus*), northern bobwhite (*Colinus virginianus*), common pheasant (*Phasianus colchicus*), eastern cottontail (*Sylvilagus floridanus*), the grey (*Sciurus carolinensis*), red (*Tamiasciurus hudsonicus*), and fox squirrel (*Sciurus niger*), migratory waterfowl, bobcat (*Lynx rufus*), coyote (*Canis latrans*), fox (*Vulpes vulpes*), opossum (*Didelphis virginiana*), skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), and raccoon (*Procyon lotor*). Game fish in inland waters comprise more than 29 species that include black bass (largemouth [*Micropterus salmoides*], smallmouth [*Micropterus dolomieu*], and spotted [*Micropterus punctulatus*]); crappie (white [*Pomoxis annularis*] and black [*Pomoxis nigromaculatus*]); sunfish (bluegill [*Lepomis macrochirus*], redbreast sunfish [*Lepomis auritus*], redear sunfish [*Lepomis microlophus*], pumpkinseed [*Lepomis gibbosus*], warmouth [*Lepomis gulosus*], green sunfish [*Lepomis cyanellus*], Roanoke bass [*Ambloplites cavifrons*], rock bass [*Ambloplites rupestris*], flier [*Centrarchus macropterus*]; and all other species of the family Centrarchidae), mountain trout (including but not limited to brook [*Salvelinus fontinalis*], brown [*Salmo trutta*] and rainbow trout [*Oncorhynchus mykiss*]), Kokanee salmon (*Oncorhynchus nerka*), walleye (*Sander vitreus*), sauger (*Sander canadensis*), pickerel (chain [*Esox niger*] and redbfin [*Esox americanus*]), muskellunge (*Esox masquinongy*), white bass (*Morone chrysops*), Bodie bass (*Morone saxatilis* x *Morone chrysops* - striped bass hybrid), striped bass (*Morone saxatilis*), shad (American [*Alosa sapidissima*] and hickory [*Alosa mediocris*]), white perch (*Morone americana*), yellow perch (*Perca flavescens*), spotted sea trout (*Cynoscion nebulosus*), flounder (*Paralichthys dentatus*), and red drum (*Sciaenops ocellatus* also known as channel bass, red fish and puppy drum).

A portion of the 76 species of reptiles and 96 species of amphibians known in North Carolina occur in the Dan and Mayo River basins. Bird species that frequent the area include American goldfinch (*Carduelis tristis*), Canada goose (*Branta canadensis*), great blue heron (*Ardea herodias*), osprey (*Pandion haliaetus*), northern cardinal (*Cardinalis cardinalis*) and many other songbirds common to the eastern US. A few examples of amphibians and reptiles common to the area are green frog (*Rana clamitans*), American toad (*Bufo americanus*), copperhead (*Agkistrodon contortrix*), black racer (*Coluber constrictor*), Eastern box turtle (*Terrapene carolina*) and yellow-bellied slider (*Trachemys scripta scripta*) (Van Alstine et al. 1999).

4.1.2.3 Rare, Threatened, Endangered, and Special Concern Species

The Dan and Mayo River basins provide habitat for rare and endangered plants, animals and aquatic organisms. Six federally listed species occur within the affected area and 79 species of plants and 55 species of insects, birds, amphibians and reptiles, fish, mussels, and mammals that are considered rare, threatened, endangered or of special concern were identified by the USFWS' Information, Planning and Conservation System (IPaC 2018) and the North Carolina Natural Heritage Data Explorer (2018) (Appendix C). Federally listed species include the Northern long eared bat (*Myotis septentrionalis*), James spinymussel (*Pleurobema collina*), Roanoke logperch (*Percina rex*), Schwenitz's sunflower (*Helianthus schweinitzii*), small-anthered bittercrest (*Cardamine micranthera*) and smooth coneflower (*Echinacea laevigata*). USFWS Birds of Conservation Concern in the vicinity of the Mayo River Conservation project include bald eagle (*Haliaeetus leucocephalus*), eastern whip-poor-will (*Antrostomus vociferous*), Kentucky warbler (*Geothlypis formosa*), prairie warbler (*Dendroica discolor*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), and wood thrush (*Hylocichla mustelina*).

4.1.3 Socioeconomic and Cultural Environment

4.1.3.1 Demographics

The Dan and Mayo River basins are primarily rural, with less than five percent of land mass having seen city or town development (DRBA 2018). The counties in the affected area have experienced little growth in recent years. Rockingham (population 90,949 in the 2017 census) and Stokes (population 45,717) are characterized by relatively comparable poverty rates (18.1 and 12.4%) to the State average (15.4%) (USCB, 2018). The population growth has been more rapid to the south of Rockingham County (i.e., northwest Guilford County) while negative growth rates are common in the Virginia counties in the northern portion of the affected area (Rockingham County 2010). Incorporated human settlements include Danbury, Walnut Cove, Pine Hall, Madison, Mayodan and Eden.

4.1.3.2 Recreation

Local, state, and national parks and recreation areas existing in or near the affected area include Hanging Rock State and Mayo River State Parks in North Carolina and Philpott Lake, Fairystone State Park, the Blue Ridge Parkway and Rocky Knob National Recreation Area in Virginia. Counties and municipalities have embraced efforts to create recreational amenities

that highlight the unique heritage of the area and networks of Greenways and Blueways have been planned and established throughout the basin. Examples are the Richmond & Danville Rail Trail in Pittsylvania County and the Dick & Willie Passage in Martinsville/Henry County on the route of the old Danville & Western Railroad. The number of river access points on the Dan and its tributaries has greatly increased, providing more opportunities for fishing and boating enthusiasts and several commercial outfitters offer guided and self-guided trips. Prior to 2002, only one river access on the Smith River in Henry County existed, today there are eight. The basin offers paddlers fast-moving white-water runs of the Dan River in Kibler Valley or slow, relaxing floats as the Dan crosses the Virginia/North Carolina border- where historic batteau navigation structures make it easy to paddle the rivers even in low water (DRBA 2018). The many lakes and reservoirs of the basin serve as attractions for outdoor enthusiasts who enjoy fishing, paddling or wildlife viewing. The North Carolina Mountains-to-Sea Trail and the Virginia Beaches to Bluegrass Trail provide hikers and cyclists a contiguous off-road path from the Blue Ridge Mountains to the Atlantic Ocean (PTRC 2012).

4.1.3.3 Cultural and Historic Resources

Aside from plant and animal habitat, the Dan River Basin also supports a culture that has been historically rich in farming and forestry. Tobacco was an important cash crop in the area; the Brightleaf tobacco curing process originated in Caswell County, bringing great wealth to the area. Prior to the Civil War, Caswell was one of the wealthiest counties in North Carolina as evident by its significant collection of antebellum homes. In the late 18th century and early 19th century, transportation was largely by water. Improvement of the river for batteau navigation spurred economic development and the founding of South Boston and Danville, VA and Milton, Leaksville (Eden) and Madison, NC. Railroads arrived in the mid-19th century, connecting the basin to wider commerce and bringing tobacco marketing and manufacturing to the towns. The railroads also made timber production more viable and companies moved in to harvest timber from the Basin, which was used to meet demand in the Northeastern and Midwestern U.S, where forest resources had been greatly depleted. While forestry still plays an important role in economy of the Basin, the advent of companies like R.J. Reynolds and American Tobacco Company meant the consolidation of small farms and factories. With the decrease in tobacco farming came the proliferation of furniture and textile industries. Cities like Bassett, Martinsville, Danville, Eden and Roxboro saw an industrial boom; however, many of these jobs would be outsourced globally beginning in the 1970s. This decline in manufacturing led to a major economic slump and the move toward more diverse industries.

4.2 Environmental Consequences

4.2.1 Environmental Consequences of the No Action Alternative

NEPA requires a federal agency to consider a “no action” alternative. Under this alternative, the Trustees would take no direct action to restore injured natural resources or compensate for lost services pending natural recovery. Instead, the Trustees would rely on natural processes for recovery of the injured natural resources and their associated services. While natural recovery

would occur over varying time scales for the injured resources services, the interim losses suffered would not be compensated under the “no action” alternative.

The principal advantages of this approach are the ease of implementation and low cost. This approach relies on the capacity of ecosystems to “self-heal.” CERCLA, however, establishes Trustee authority to seek compensation for interim losses pending recovery of the natural resources. Further, lost ecosystem services during the “self-heal” period would not be addressed under this approach. The “no action” alternative is rejected for compensatory restoration, as it does not meet the purpose and need for action. Losses were suffered and impacts continue during the period of recovery from the Spill. Technically feasible, cost-effective alternatives exist to compensate for these losses.

4.2.2 Environmental Consequences of the Selected Alternatives

A summary of environmental consequences of the selected Alternatives is provided in Table 2. In general, adverse impacts associated with implementation of Alternative 2 are anticipated to be minor and temporary. Outside of minor and mostly temporary adverse impacts during construction, implementation of Alternative 5 is anticipated to provide benefits, primarily in the form of improved recreational access to the upper Dan River.

4.3 Summary of Cumulative Impacts

The Council on Environmental Quality’s (CEQ) regulations to implement NEPA require the assessment of cumulative impacts in the decision-making process for federal projects, plans, and programs. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 C.F.R. §1508.7). As stated in the CEQ handbook, “Considering Cumulative Effects” (CEQ, 1997), cumulative impacts need to be analyzed in terms of the specific resource, ecosystem, and human community being affected and should focus on effects that are truly meaningful. The cumulative effects analysis of the selected alternatives in this RP/EA is commensurate with nature and the degree of direct and indirect effects anticipated from implementation of the projects. For the purpose of this analysis, the cumulative impact spatial boundary includes the upper Dan River Basin, shown in Figure 1, since that is where projects described would occur. The selected alternatives being evaluated in this Environmental Assessment are anticipated to result in predominantly beneficial impacts to recreational uses, with potential minor benefits to riverine and riparian habitat as a result of conservation activities at the Mayo River conservation site.

Implementing the alternatives as selected and analyzed in this RP/EA would have no major adverse impacts on upper Dan River Basin habitats, on adjacent lands and waterways, or on the natural resources within each. As described above, the selected projects may result in minor, short term adverse impacts and both short- and long-term beneficial impacts. When considered with other past, present, and reasonably foreseeable future actions within the upper Dan River Basin, the selected alternatives are not anticipated to have adverse cumulative impacts. Direct

and indirect adverse impacts, as discussed previously, are likely to be short term and will occur primarily during periods of active construction activities. Periods of active construction for one or more boat ramps are anticipated to be less than one month, and individually and cumulatively, would result in only short-term impacts. The selected Alternatives are not expected to result in significant cumulative impacts on the human environment since they alone, or in combination with other current and future activities (described below) in the vicinity, would not significantly change the larger current hydrological patterns of discharge, recreational use, economic activity or land-use in the upper Dan River Basin.

Other activities in the upper Dan River Basin that may be undertaken by other entities, private and public, vary widely. However, the Dan River Basin is largely rural and has experienced little growth and development in recent years. Activities on private parcels may include maintenance of utilities, development of housing on nearby or adjacent uplands, and/or agriculture practices on adjacent uplands. These types of activities are expected to result in short- and long-term adverse impacts within the upper Dan River Basin. Maintenance of public utilities, such as power lines, and pipelines in easements within state or federally-owned lands will not be impeded as a result of the selected Alternatives. State agencies may undertake land or wildlife management activities on parcels under their control throughout the project area. These activities may include restoration activities similar to those selected under this RP/EA and others such as road maintenance. These activities would result in both short- and long-term adverse and beneficial impacts.

Table 2. Summary of Environmental Consequences of the No Action and Selected Alternatives.

Environmental Consequences	Alternative 1: No Action	Selected Alternatives	
		Alternative 2 – Remaining Mayo River Conservation	Alternative 5 - Establishment of Public Boat Launch Facilities on the Dan River
Physical Resources			
Hydrology and Water Quality	Project area water, air, and geological/sediment conditions would not be affected since no restoration would occur.	Long-term, indirect, minor and beneficial impacts since conservation activities could enhance habitat quality and return to natural conditions. Increase human use could result in increased trash in waterways.	Short-term, minor, direct and localized impacts to water quality could occur during construction. Construction activities could increase turbidity in the immediate project vicinity, although best management practices (BMPs) would minimize impacts.
Air Resources	Any ecological benefits that may result from Alternative 2 would not occur, and the trajectory of any ecologically degraded areas would remain unchanged.	No impact to local or regional air quality is expected.	Short-term, direct, minor, and adverse impacts during construction as a result of heavy equipment emissions and dust.
Sediment/ Geology		Conservation activities have potential to maintain or enhance natural conditions over time. Improved sediment transport and surface runoff following conservation activities could improve aquatic habitat. Impacts are expected to be long-term, indirect, minor and beneficial.	Minor permanent impacts to habitat within the boat ramp footprint area and immediately adjacent to the ramp would occur. Localized disturbance of sediments during boat ramp construction is anticipated.
Biological Resources			
Fish and Wildlife	Project area fish, wildlife, vegetation, and special species would not be affected since no restoration would occur.	Long-term minor benefits to fish and wildlife are anticipated since the acquired land will be removed from development or conversion pressure and management can be implemented to control invasive species or complete other activities beneficial to fish and wildlife.	Short-term, direct, and minor adverse impacts to fish and other aquatic biota during construction due to increased turbidity and sedimentation from excavation. BMPs would be employed to reduce impacts.

Table 2 Continued

Environmental Consequences	Alternative 1: No Action	Selected Alternatives	
		Alternative 2 – Mayo River Conservation	Alternative 5 – Establishment of Public Boat Launch Facilities on the Dan River
Biological Resources (cont.)			
Vegetation	Project area fish, wildlife, vegetation, and special species would not be affected since no restoration would occur. Any biological improvements that may occur from Alternative 2 would not be realized	Long-term, indirect, and minor benefits to vegetation are expected because habitats would be conserved and potentially enhanced, including control of invasive species.	Construction activities such as clearing and earth moving would directly impact plants within the boat ramp footprint. Affected vegetation adjacent to the construction area may be disturbed, but effects are likely to be short-term.
Special Status Species		Same consequences as listed for Fish and Wildlife	No impacts are anticipated. A survey will be completed to ensure no special status species are present. Appropriate permits or permissions would be sought, if necessary.
Socio-economics			
Economic	Project area socio-economic variables would not be affected since no restoration would occur. Potential economic benefits as a result of the enhanced recreational opportunities would not be realized.	Permanent public open space areas may have the effect of increasing nearby residential land values, and increases in recreational activity on the acquired land may result in increased economic activity. Thus, the economic impacts are expected to be long-term, direct and indirect, minor and beneficial.	Except for the resources necessary to plan, construct, and maintain the boat ramp, there are no economic impacts associated with this project.
Aesthetics and Noise		Minor long-term benefit to aesthetic and scenic qualities and values associated with acquired lands since they will be conserved. There may be a minor increase in traffic and/or recreational noise due to increased human use.	Minor, temporary, and adverse impact to aesthetics are expected during construction. Minor to moderate and temporary increase in noise is anticipated during construction.

Table 2 Continued

Environmental Consequences	Alternative 1: No Action	Selected Alternatives	
		Alternative 2 – Mayo River Conservation	Alternative 5 – Establishment of Public Boat Launch Facilities on the Dan River
Socio-economics (cont.)			
Recreation	Project area socio-economic variables would not be affected since no restoration would occur. Recreational benefits would not be realized since access opportunities would not be created.	New or improved access to river and riparian habitat are expected. Resource-based recreational activities, such as for bird watching, canoeing, kayaking, fishing, and other similar activities, may result from this alternative.	Users of small power boats, kayaks and other small water craft are expected to benefit from one or more boat ramps along the Dan River.
Transportation		Increased traffic in the vicinity of acquired area could be minor to moderate if recreational access is enhanced. Although uncertainty remains until state park management identify specific actions, impacts are anticipated to be long-term, indirect, minor and adverse.	A minor and permanent increase in traffic in the vicinity of one or more boat ramps is possible since recreational access would be enhanced. A minor and short-term increase in contractor vehicles would occur at construction site(s).
Cultural and Historical		The potential for impacts to historic and cultural resources is very location-dependent. Activities will be subject to review under Section 106 of the National Historic Preservation Act of 1966.	Same evaluation as for Alternative 2.

Table 2 Continued

Environmental Consequences	Alternative 1: No Action	Selected Alternatives	
		Alternative 2 – Mayo River Conservation	Alternative 5 – Establishment of Public Boat Launch Facilities on the Dan River
Socio-economics (cont.)			
Public Health and Safety	Public health and safety would not be impacted since no restoration activities would be undertaken.	Land acquisition and conservation poses no health and safety risk. Improvements to the acquired land may result in improved safety conditions at the park.	There are no anticipated impacts to public health and safety as a result of constructing one or more boat ramps.
Environmental Justice	Project area socio-economic variables would not be affected since no restoration would occur.	The project, in general, does not create a disproportionately high or adverse effect on any minority or low-income populations. An increase in public use of the newly acquired land could result in downstream economic activity in the project area and thus be generally beneficial to local economies.	Environmental justice communities will not be negatively impacted through this project. This project will create recreational benefits along the Dan River to area residents.

5.0 PROJECT FULFILMENT AND MONITORING

As described earlier, Duke Energy has completed several of the selected restoration alternatives. Summaries of some of the completed restoration are included as Appendices to this Restoration Plan. Appendix A includes photo documentation of completed restoration of Alternative 3, Abreu Grogan Park Improvements. Appendix B includes photo documentation of Alternative 4, the Pigg River Dam Removal Project.

Monitoring activities for the Pigg River Dam Removal project are detailed below:

Photographic documentation of project activities occurred throughout construction. Qualitative and quantitative monitoring, which began November 2016, will be conducted annually for a period not to exceed 5 years post-construction. Reports will be made available on the case [website](#). The purpose of monitoring is to evaluate project stabilization and inform future natural resources management decisions. Stabilization metrics include the formation of stable channel

morphology up to 3.2 miles upstream and 5 miles downstream of the dam that consists of riffles, pools, bars, benches, banks vegetated above high water level, deposition, instream habitat, mobilization of sediment, and fish passage. Initial monitoring and subsequent site visits have indicated that these metrics already indicate channel morphology downstream is transitioning to more stable riverine configuration. Once downcutting and transport of legacy sediments is completed, the upstream reach is also anticipated to reach equilibrium.

Pursuant to the Consent Decree, Duke Energy will submit semi-annual reports to the Trustees on its progress to complete the remaining selected restoration alternative, Alternative 5.

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APPENDICES

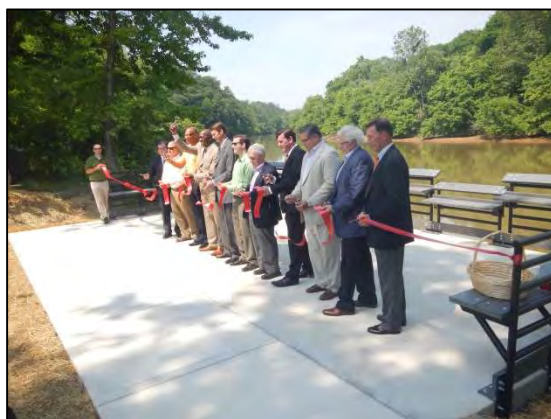
APPENDIX A: Abreu Grogan Park Amenity Summary

ABREU-GROGAN PARK

AMENITY SUMMARY

EXISTING AND PROPOSED AMENITY ENHANCEMENTS

Abreu-Grogan Park
2020 Memorial Drive
Danville, VA 24541



ENHANCEMENTS COMPLETED MAY 26, 2016



EXISTING AMENITIES AND NEW AMENITY ENHANCEMENTS WITH DESCRIPTIONS WHERE APPLICABLE

Picture 1: Existing floating dock and canoe launch. No enhancements planned.**Picture 2:** Added accessible parking and accessible sidewalk leading to the floating dock and canoe launch. Accessible sidewalk also leads to kiosk and courtesy dock.

Picture 3: Added new accessible kiosk.



Picture 4: Added new accessible sidewalk leading to the kiosk and courtesy dock.



Picture 5: Existing parking spaces for the floating dock and canoe launch. Accessible sidewalk to be added. Future kiosk to be added in the vicinity of the existing trash can.



Existing Condition

Picture 6: Additional view of accessible parking and accessible sidewalk leading to the existing floating dock and canoe launch along with accessible sidewalk leading to the kiosk and courtesy dock.



Enhanced Condition

Picture 7: Existing culvert to receive new headwall.**Picture 8:** New headwall added to existing culvert.

Picture 9: Existing boat ramp. Courtesy dock and connecting sidewalk to be added.



Picture 10: New accessible courtesy dock and connecting sidewalk.



Picture 11: Additional view of existing boat ramp also showing area for proposed courtesy dock and fishing platform.



Picture 12: New courtesy dock.



Picture 13: Area for proposed fishing platform and view of the existing floating dock and canoe launch.



Picture 14: New courtesy dock.



Picture 15: New accessible fishing platform.



Picture 16: Additional view of the new accessible fishing platform.



Picture 17: Existing storage building and proposed area for restroom.



Picture 18: New restroom next to the existing storage building.



Picture 19: New accessible parking spaces with accessible sidewalk connecting to the restroom and fishing platform.



Picture 20: New accessible sidewalk to the fishing platform.



Picture 21: Existing parking spaces. Portion of curb to be removed to create accessible parking for future sidewalk to connect to the restroom and fishing platform.



Picture 22: New accessible parking spaces with accessible sidewalk connecting to the restroom and fishing platform.



Picture 23: Existing picnic table and grill near the City of Danville Water Pumping Building.



Picture 24: Relocated picnic table and grill.



APPENDIX B: Pigg River Dam Restoration at Power Dam; After Action Report



Pigg River Restoration at Power Dam

Year-1 Monitoring Report

As required by VDEQ permit #15-1551 and USFWS biological opinion for the Pigg River Restoration at Power Dam project.

Prepared for:

Friends of the Rivers of Virginia, Inc.
Attn: Mr. Bill Tanger, Chairman
P.O. Box 1750
Roanoke, Virginia 24008

Prepared By:

Wetland Studies and Solutions, Inc.
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Roanoke, VA 24015
WSSI #22906.01

DECEMBER 2017

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Appendix E – Groundwater Monitoring Data	
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References

Introduction

Wetland Studies and Solutions, Inc. (WSSI) presents this monitoring report to the Friends of the Rivers of Virginia (FORVA), providing data related to Year-1 Monitoring efforts. The monitoring program has been designed to track changes to the river corridor and adjacent wetlands following the removal of the decommissioned Power Dam on the Pigg River in Rocky Mount, Virginia, and in accordance with the *Virginia Water Protection Permit Joint Permit Application #15-1551* (draft dated 6/30/2016). Monitoring activities were performed as outlined in the *Pigg River Restoration at Power Dam Monitoring RFP* (WSSI#1054, dated July 27, 2016, a.k.a. “RFP”). Results of annual monitoring required by the U.S. Fish and Wildlife Service in their biological opinion dated January 13, 2016 are hereby incorporated by reference.

The majority of necessary field data was collected by WSSI staff during normal baseflow conditions on October 03 - 05, 2017, with additional wetland hydrology information collected November 29, 2017. A total of twelve (12) cross sections were utilized. Cross-sections were established during November 2016 Post-Construction Monitoring and based on locations outlined in the RFP. Cross-sections, as located by GPS, are shown in **Exhibit 1**. Half of the cross-sections were established upstream and half below the relic dam structure. Spacing was adjusted to focus on areas around the dam where the greatest change was anticipated to occur. Cross-sections covered areas far enough upstream to be beyond backwater effects created by the dam and stretched downstream to the point where effects of the dam removal were anticipated to be largely diminished. Cross-section locations were also selected to correspond with previous monitoring efforts (Hitt et al., 2009; Bass, 2015).

Methods

The focus of Year-1 Monitoring efforts was to locate the twelve monitoring stations previously established and document current channel conditions. The results are compared with post-construction monitoring information to show channel evolution throughout the dam removal 5-year post-construction monitoring period. WSSI staff began by accessing upstream cross-sections via canoe. Upstream access was gained through the Town of Rocky Mount’s sanitary sewer pumping station (entrance road located near the intersection of Power Dam Road and Scenic River Drive). Cross-sections 1-5 were accessed exclusively by canoe. Cross-sections 6-12 were accessed via vehicle/foot travel through Town or private property – specifically public land or Town property for sections 6-8, via Hudson Farm Lane (private) for section 9-11, and through private land on Chestnut Hill Road just downstream of the Pigg River bridge for section 12.

At each cross-section, WSSI staff photo-documented local conditions through upstream, downstream and channel bank photos. All photo documentation adhered to VWP guidelines, noting: direction, photographer, date/time, vegetative cover (as applicable), and a brief description. This information is included in **Appendix A**.

In addition to photographs, WSSI staff surveyed cross-section geometry using a laser level and survey tape to record station/elevation information. During Year 1 monitoring, points were surveyed at a maximum of 5-ft intervals along the sections, generally consistent with methodologies used in the *Sediment Capacity and Fate Modeling Report* (Bass, 2015) and Post-

Construction Monitoring. Slight variations in cross section geometry are attributable to differences in individual sampling events and site specific factors (i.e. normal survey error, vegetation, slack in the survey tape, etc.). Major changes seen in cross sections are due to channel evolution and erosion following dam removal. Cross-section geometry is given in **Appendix A**, with sections showing Post-Construction and 1-year channel geometry overlaid.

Physical habitat parameters including particle size, embeddedness, woody debris, and thalweg depth measurements were recorded consistent with previous studies (Hitt et al., 2009). Observations of this information is included in **Appendix A**. The presence and quantification of large woody debris was documented by visual assessment for areas 150 feet upstream and downstream of the measured cross-section. Woody debris counts are also given in **Appendix A**.

Thalweg measurements were taken to document streambed elevation changes in the vicinity of the cross-section. Depth measurements were collected at 5-ft. intervals from the cross-section location in both the upstream and downstream direction for a distance of approximately 50 ft. (each direction), unless obscured by thick vegetation. Thalweg plots are also given in **Appendix A** following site descriptions and photos.

The method of data collection for bed material size varied depending on local conditions. The particle size distribution at the majority of monitored cross-sections was uniformly sandy. Bed material at the two downstream-most cross sections was coarser in nature and warranted formal sampling. A Wolman riffle pebble count was performed at these two sections and particle size distribution data is presented in **Appendix B**.

Year-1 monitoring efforts also included biological stream monitoring at three (3) of the defined cross-sections. Location and sampling methods corresponded to previous monitoring efforts as outlined in *Biomonitoring for the Rocky Mount Power Dam Removal Project: Establishing Baseline Conditions* (Hitt et al., 2009) and WSSI standard operating procedures. Detailed information regarding the biological stream monitoring can be found in **Appendix C**.

Wetland hydrology monitoring activities were conducted at forested wetland sites #2, #3, and #4, as outlined in the Joint Permit Application¹ (two locations within Site #2 and one location each within Site #3 and #4). Locations are shown in **Exhibit 1**. Sampling consisted of photo documentation of site conditions and observations of hydrology and soil characteristics necessary for completion of the hydrology portion of the “Wetland Determination Data Form – Eastern Mountains and Piedmont Region” from the U.S. Army Corps of Engineers Regional Supplement, Version 2 (2012). A 12-18” deep test pit was dug to document the presence of a water table or saturation. Wetland soil indicators were photo documented when observed and are scheduled for more detailed assessment in future years, as required by permit. Field data forms are included in **Appendix D**.

¹ Year 1 wetland hydrology data collection was conducted separate from cross section surveys and benthic sampling. Sampling occurred outside the identified growing season, but all necessary data was still able to be collected.

Also included within this report are the results of the first 9 months (February 02 – November 03, 2017) of groundwater monitoring at Wetland Site #2, (location shown in **Exhibit 1**). Monitoring wells were installed February 02, 2017. All data collected prior to this reports compilation is included. Groundwater monitoring information and results can be found in **Appendix E** with corresponding local weather station data given in **Appendix F**.

Results and Conclusions

Year 1 monitoring cross section surveys indicate slight bed incision at Cross Section 1 (approximately 1-ft of drop in bed elevation), with increased downcutting in Cross Sections 2-4 ranging from 2-ft to nearly 7-ft at Section 4. Changes at Sections 5 and 6 were less dramatic due to the fact that significant evolution occurred during the two-month time between completion of dam removal activities and the 2016 post-construction monitoring when significant high flow events occurred. Where banks are not vertical, surface soils at the cross sections have made moderate gains in stability due to colonization by herbaceous vegetation. However, root depth is shallow and steep bank areas are still exhibiting signs of mass failure. Tension cracking is visible at cross sections where steep banks still exist.

Results of benthic sampling showed a slight decrease in Stream Condition Index scores at two of the three monitoring locations (**Appendix C**). However, the level of variation seen from pre-removal sampling events is not beyond that which may be reasonably expected and attributable to independent factors such as normal climatic variation. Future monitoring events will be necessary to determine the influence of dam removal on benthic communities.

Wetland hydrology monitoring at Sites 2, 3, and 4 found persistent wetland vegetation. Moderate drought conditions were present during sampling. Soils at both Site 3 and 4 locations (adjacent to Cross Section 2 and Cross Section 4, respectively) were a uniform sandy loam texture with no water or saturation observed in test pits. Two sampling locations were established at Wetland Site 2 (river left, just upstream of the dam) and hydric soil indicators were seen in both locations. No water or saturation was seen at Site 2, Point 1. Water was present at approximately 6” below surface elevation at Site 2 Point 2. Qualitative observations made during monthly monitoring well data collection has shown the Site 2 wetland area to be largely dry at the surface since June 2017. These observations of drought conditions are shown by comparing rainfall from *Monthly Climate Normals (1981-2010)* (NOAA) for Roanoke, Virginia to local weather station data (**Appendix E**) for the period of February 2017 through October 2017 (Table 1). While February – March had significantly more than average precipitation totals, June – September experienced a deficit of almost 4.5 inches (Table 1).

Table 1.

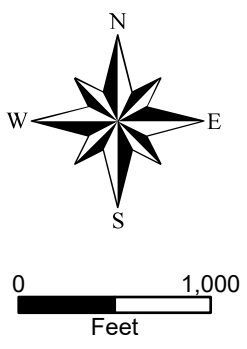
Monthly Rainfall Totals		
	Roanoke (Avg.) ¹	KVAROCKY ²
February	2.89	1.17
March	3.46	4.50
April	3.37	6.66
May	4.06	10.49
June	3.83	2.49
July	4.04	3.20
August	3.56	2.98
September	3.89	2.20
October	2.89	3.37
Total	31.99	37.06

¹ NOAA, Roanoke Monthly Rainfall Normals 1981-2010

² Local Weather Station Data - Appendix F



Pigg River Restoration at Power Dam-Monitoring Permanent Monitoring Locations Original Scale: 1"=1000'



- Survey Locations
- Cross Sections

L:\Proposals\GIS\2016\PiggRiverRestoration_PowerDam\PiggRiverRestoration.mxd

APPENDIX C: List of Species classified as rare, threatened, endangered or of special concern in the Dan and Mayo River Basins. Source: U.S. Fish and Wildlife Service Information, Planning and Conservation System (IPaC) and the North Carolina Natural Heritage Program.

TAXONOMIC GROUP	SCIENTIFIC NAME	COMMON NAME	STATUS	COUNTY
Amphibian	<i>Ambystoma talpoideum</i>	Mole Salamander	Special Concern	Rockingham
Amphibian	<i>Hemidactylium scutatum</i>	Fourtoed Salamander	Special Concern	Stokes
Amphibian	<i>Plethodon wehrlei</i>	Wehrle's Salamander	Threatened	Stokes
Bird	<i>Ammodramus savannarum</i>	Grasshopper Sparrow	Watch List, Rare	Rockingham
Bird	<i>Corvus corax</i>	Common Raven	Watch List, Rare	Stokes
Bird	<i>Empidonax traillii</i>	Willow Flycatcher	Watch List, Rare	Stokes
Bird	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	Endangered	Stokes
Bird	<i>Lanius ludovicianus</i>	Loggerhead Shrike	Special Concern	Rockingham
Butterfly	<i>Speyeria diana</i>	Diana Fritillary	Watch List, Rare	Stokes
Caddisfly	<i>Diplectrona metaqui</i>	a diplectronan caddisfly	Rare	Stokes
Crustacean	<i>Cambarus davidi</i>	Carolina Ladle Crayfish	Rare	Stokes
Crustacean	<i>Orconectes carolinensis</i>	North Carolina Spiny Crayfish	Special Concern	Stokes
Dragonfly or Damselfly	<i>Arigomphus villosipes</i>	Unicorn Clubtail	Watch List, Rare	Rockingham
Dragonfly or Damselfly	<i>Lestes eurinus</i>	Amber-winged Spreadwing	Watch List, Rare	Rockingham
Dragonfly or Damselfly	<i>Macromia margarita</i>	Mountain River Cruiser	Rare	Rockingham
Dragonfly or Damselfly	<i>Ophiogomphus edmunds</i>	Edmund's Snaketail	Rare	Stokes
Dragonfly or Damselfly	<i>Ophiogomphus incurvatus</i>	Appalachian Snaketail	Watch List, Rare	Stokes
Dragonfly or Damselfly	<i>Somatochlora georgiana</i>	Coppery Emerald	Rare	Rockingham
Dragonfly or Damselfly	<i>Stylurus amnicola</i>	Riverine Clubtail	Watch List, Rare	Rockingham
Freshwater Bivalve	<i>Elliptio fisheriana</i>	Northern Lance	Rare	Stokes
Freshwater Bivalve	<i>Lampsilis cariosa</i>	Yellow Lampmussel	Endangered	Rockingham
Freshwater Bivalve	<i>Lasmigona subviridis</i>	Green Floater	Endangered	Stokes

Freshwater Bivalve	<i>Pleurobema collina</i>	James Spiny mussel	Endangered	Stokes
Freshwater Bivalve	<i>Strophitus undulatus</i>	Creeper	Threatened	Rockingham
Freshwater Bivalve	<i>Villosa constricta</i>	Notched Rainbow	Threatened	Stokes
Freshwater Bivalve	<i>Villosa delumbis</i>	Eastern Creekshell	Rare	Rockingham
Freshwater Fish	<i>Ambloplites cavifrons</i>	Roanoke Bass	Rare	Rockingham
Freshwater Fish	<i>Carpionodes cyprinus</i>	Quillback	Rare	Stokes
Freshwater Fish	<i>Cottus caeruleomentum</i>	Blue Ridge Sculpin	Special Concern	Stokes
Freshwater Fish	<i>Cyprinella labrosa</i>	Thicklip Chub	Watch List, Rare	Stokes
Freshwater Fish	<i>Etheostoma flabellare</i>	Fantail Darter	Watch List, Rare	Rockingham
Freshwater Fish	<i>Etheostoma podostemone</i>	Riverweed Darter	Rare	Stokes
Freshwater Fish	<i>Etheostoma vitreum</i>	Glassy Darter	Watch List, Rare	Stokes
Freshwater Fish	<i>Exoglossum maxillingua</i>	Cutlip Minnow	Special Concern	Stokes
Freshwater Fish	<i>Moxostoma ariommum</i>	Bigeye Jumprock	Threatened	Stokes
Freshwater Fish	<i>Noturus gilberti</i>	Orange-fin Madtom	Endangered	Stokes
Freshwater Fish	<i>Percina rex</i>	Roanoke Logperch	Endangered	Rockingham
Freshwater Fish	<i>Thoburnia hamiltoni</i>	Rustyside Sucker	Endangered	Stokes
Grasshopper or Katydid	<i>Dendrotettix australis</i>	Scrub Pine Grasshopper	Watch List, Rare	Stokes
Lichen	<i>Ephebe lanata</i>	Rockshag Lichen	Rare	Stokes
Lichen	<i>Peltigera hydrothyria</i>	Waterfan Lichen	Watch List, Rare	Stokes
Liverwort	<i>Frullania plana</i>	A Liverwort	Watch List, Rare	Stokes
Liverwort	<i>Plagiochila ludoviciana</i>	A Liverwort	Rare	Stokes
Mammal	<i>Myotis lucifugus</i>	Little Brown Bat	Rare	Stokes
Mammal	<i>Perimyotis subflavus</i>	Tricolored Bat	Rare	Stokes
Mammal	<i>Sciurus niger</i>	Eastern Fox Squirrel	Watch List, Rare	Stokes
Mayfly	<i>Tsalia bernerii</i>	a mayfly	Rare	Rockingham
Moss	<i>Anacamptodon splachnoides</i>	Knothole Moss	Watch List, Rare	Stokes
Moss	<i>Andreaea rothii</i> var. <i>rothii</i>	Black Falcate Split Moss	Watch List, Rare	Stokes

Moss	<i>Brothera leana</i>	Boar Moss	Watch List, Rare	Stokes
Moss	<i>Dicranum fuscescens</i>	Fuscos Moss	Watch List, Rare	Stokes
Moss	<i>Dicranum spurium</i>	Rusty Fork Moss	Watch List, Rare	Stokes
Moss	<i>Entodon compressus</i>	Flattened Entodon	Rare	Rockingham
Moss	<i>Fissidens asplenioides</i>	A Plume Moss	Rare	Stokes
Moss	<i>Fissidens elegans</i>	A Plume Moss	Watch List, Rare	Stokes
Moss	<i>Helodium paludosum</i>	Pond Fern Moss	Watch List, Rare	Stokes
Moss	<i>Orthodontium pellucens</i>	Translucent Orthodontium	Rare	Stokes
Moss	<i>Philonotis longiseta</i>	An Apple Moss	Watch List, Rare	Stokes
Moss	<i>Polytrichum appalachianum</i>	Appalachian Haircap Moss	Watch List, Rare	Stokes
Moth	<i>Apantesis carlotta</i>	Carlotta's Tiger Moth	Watch List, Rare	Stokes
Moth	<i>Argillophora furcilla</i>	Silver Fork Cane Moth	Watch List, Rare	Stokes
Moth	<i>Caripeta aretaria</i>	Southern Pine Looper	Watch List, Rare	Stokes
Moth	<i>Catocala herodias</i>	Herodias Underwing	Rare	Stokes
Moth	<i>Chytonix sensilis</i>	Barrens Marvel	Watch List, Rare	Stokes
Moth	<i>Heliomata infulata</i>	Rare Spring Moth	Watch List, Rare	Stokes
Moth	<i>Psamatodes abydata</i>	Dot-lined Angle	Watch List, Rare	Stokes
Moth	<i>Scopula aemulata</i>	Diminutive Wave	Watch List, Rare	Stokes
Moth	<i>Ulolonche modesta</i>	Modest Quaker Moth	Watch List, Rare	Stokes
Moth	<i>Zale sp. nr. squamularis</i>	a new Zale	Watch List, Rare	Stokes
Reptile	<i>Cemophora coccinea</i>	Scarlet Snake	Watch List, Rare	Rockingham
Reptile	<i>Crotalus horridus</i>	Timber Rattlesnake	Special Concern	Stokes
Vascular Plant	<i>Agastache nepetoides</i>	Yellow Giant- hyssop	Rare	Stokes
Vascular Plant	<i>Asplenium bradleyi</i>	Bradley's Spleenwort	Rare	Stokes
Vascular Plant	<i>Baptisia albescens</i>	Thinod White Wild Indigo	Watch List, Rare	Stokes
Vascular Plant	<i>Berberis canadensis</i>	American Barberry	Special Concern	Rockingham
Vascular Plant	<i>Bromus nottowanus</i>	Nottoway Valley Brome	Watch List, Rare	Rockingham
Vascular Plant	<i>Cardamine micranthera</i>	Small-anthered Bittercress	Endangered	Stokes
Vascular Plant	<i>Cardamine rotundifolia</i>	Mountain Watercress	Threatened	Stokes
Vascular Plant	<i>Carex granularis</i>	Limestone Meadow Sedge	Watch List, Rare	Stokes
Vascular Plant	<i>Carex mitchelliana</i>	Mitchell's Sedge	Watch List, Rare	Stokes

Vascular Plant	<i>Cerastium nutans</i>	Nodding Chickweed	Watch List, Rare	Rockingham
Vascular Plant	<i>Chelone cuthbertii</i>	Cuthbert's Turtlehead	Special Concern	Stokes
Vascular Plant	<i>Corallorhiza odontorhiza</i>	Autumn Coral-root	Watch List, Rare	Stokes
Vascular Plant	<i>Crataegus succulenta</i>	Fleshy Hawthorn	Rare	Stokes
Vascular Plant	<i>Crocianthemum propinquum</i>	Creeping Sunrose	Threatened	Stokes
Vascular Plant	<i>Dichanthelium annulum</i>	Ringed Witch Grass	Rare	Stokes
Vascular Plant	<i>Dirca palustris</i>	Leatherwood	Watch List, Rare	Rockingham
Vascular Plant	<i>Echinacea laevigata</i>	Smooth Coneflower	Endangered	Rockingham
Vascular Plant	<i>Euonymus atropurpureus</i> var. <i>atropurpureus</i>	Eastern Wahoo	Watch List, Rare	Stokes
Vascular Plant	<i>Fallopia cristata</i>	Crested Climbing Buckwheat	Watch List, Rare	Stokes
Vascular Plant	<i>Fothergilla major</i>	Large Witch-alder	Rare	Stokes
Vascular Plant	<i>Gentiana austromontana</i>	Appalachian Gentian	Watch List, Rare	Stokes
Vascular Plant	<i>Gillenia stipulata</i>	Indian Physic	Threatened	Stokes
Vascular Plant	<i>Hackelia virginiana</i>	Virginia Stickseed	Rare	Rockingham
Vascular Plant	<i>Helianthus schweinitzii</i>	Schweinitz's Sunflower	Endangered	Stokes
Vascular Plant	<i>Heuchera caroliniana</i>	Carolina Alumroot	Watch List, Rare	Stokes
Vascular Plant	<i>Heuchera parviflora</i> var. <i>parviflora</i>	Grotto Alumroot	Watch List, Rare	Stokes
Vascular Plant	<i>Heuchera parviflora</i> var. <i>saurensis</i>	Sauratown Grotto Alumroot	Watch List, Rare	Stokes
Vascular Plant	<i>Heuchera pubescens</i>	Downy Alumroot	Rare	Stokes
Vascular Plant	<i>Humulus lupulus</i> var. <i>lupuloides</i>	Hops	Watch List, Rare	Stokes
Vascular Plant	<i>Humulus lupulus</i> var. <i>pubescens</i>	Hops	Watch List, Rare	Rockingham
Vascular Plant	<i>Hydrastis canadensis</i>	Goldenseal	Rare	Stokes
Vascular Plant	<i>Hydrophyllum virginianum</i>	John's Cabbage	Watch List, Rare	Rockingham
Vascular Plant	<i>Isotria verticillata</i>	Large Whorled Pogonia	Watch List, Rare	Stokes
Vascular Plant	<i>Juglans cinerea</i>	Butternut	Watch List, Rare	Stokes
Vascular Plant	<i>Juncus secundus</i>	Nodding Rush	Watch List, Rare	Rockingham
Vascular Plant	<i>Liatris aspera</i>	Rough Blazing-star	Threatened	Stokes
Vascular Plant	<i>Liatris squarulosa</i>	Earle's Blazing-star	Rare	Stokes
Vascular Plant	<i>Lindernia monticola</i>	Flatrock Pimpernel	Watch List, Rare	Stokes
Vascular Plant	<i>Luzula multiflora</i> var. <i>multiflora</i>	Heath Woodrush	Watch List, Rare	Stokes
Vascular Plant	<i>Lysimachia tonsa</i>	Southern Loosestrife	Rare	Stokes

Vascular Plant	<i>Mertensia virginica</i>	Virginia Bluebells	Watch List, Rare	Rockingham
Vascular Plant	<i>Micranthes micranthidifolia</i>	Lettuce-leaf Saxifrage	Watch List, Rare	Stokes
Vascular Plant	<i>Mononeuria groenlandica</i>	Greenland Sandwort	Threatened	Stokes
Vascular Plant	<i>Monotropsis odorata</i>	Sweet Pinesap	Special Concern	Stokes
Vascular Plant	<i>Panax quinquefolius</i>	Ginseng	Watch List, Rare	Stokes
Vascular Plant	<i>Panax trifolius</i>	Dwarf Ginseng	Watch List, Rare	Rockingham
Vascular Plant	<i>Paronychia argyrocoma</i>	Silverling	Watch List, Rare	Stokes
Vascular Plant	<i>Parthenium auriculatum</i>	Glade Wild Quinine	Rare	Rockingham
Vascular Plant	<i>Paspalum pubiflorum</i> var. <i>glabrum</i>	Hairy-seed Crown Grass	Watch List, Rare	Stokes
Vascular Plant	<i>Pieris floribunda</i>	Fetterbush	Watch List, Rare	Stokes
Vascular Plant	<i>Pinus strobus</i>	Eastern White Pine	Watch List, Rare	Rockingham
Vascular Plant	<i>Polemonium reptans</i> var. <i>reptans</i>	Jacob's Ladder	Threatened	Stokes
Vascular Plant	<i>Polygonum tenue</i>	Glade Knotweed	Watch List, Rare	Rockingham
Vascular Plant	<i>Pseudognaphalium micradenium</i>	Small Rabbitobacco	Rare	Stokes
Vascular Plant	<i>Ptelea trifoliata</i>	Wafer-ash	Watch List, Rare	Rockingham
Vascular Plant	<i>Pyrola americana</i>	American Shinleaf	Watch List, Rare	Rockingham
Vascular Plant	<i>Quercus bicolor</i>	Swamp White Oak	Watch List, Rare	Rockingham
Vascular Plant	<i>Quercus ilicifolia</i>	Bear Oak	Endangered	Stokes
Vascular Plant	<i>Quercus muehlenbergii</i>	Chinquapin Oak	Watch List, Rare	Rockingham
Vascular Plant	<i>Rhododendron catawbiense</i>	Catawba Rhododendron	Watch List, Rare	Stokes
Vascular Plant	<i>Sceptridium jenmanii</i>	Alabama Grape-fern	Special Concern	Stokes
Vascular Plant	<i>Scutellaria serrata</i>	Showy Skullcap	Watch List, Rare	Rockingham
Vascular Plant	<i>Sedum glaucophyllum</i>	Cliff Stonecrop	Rare	Stokes
Vascular Plant	<i>Silphium connatum</i>	Virginia Cuplant	Special Concern	Stokes
Vascular Plant	<i>Silphium connatum</i>	Virginia Cuplant	Special Concern	Rockingham
Vascular Plant	<i>Silphium perfoliatum</i>	Northern Cuplant	Threatened	Stokes
Vascular Plant	<i>Solidago rigida</i> var. <i>glabrata</i>	Southeastern Bold Goldenrod	Rare	Rockingham
Vascular Plant	<i>Solidago ulmifolia</i>	Elm-leaf Goldenrod	Rare	Rockingham
Vascular Plant	<i>Sphenopholis intermedia</i>	Prairie Wedgescale	Watch List, Rare	Stokes
Vascular Plant	<i>Spiraea corymbosa</i>	Shinleaf Meadowsweet	Endangered	Stokes
Vascular Plant	<i>Stewartia ovata</i>	Mountain Camellia	Rare	Stokes
Vascular Plant	<i>Thermopsis fraxinifolia</i>	Ash-leaved Golden-banner	Special Concern	Stokes
Vascular Plant	<i>Thermopsis mollis</i>	Appalachian Golden-banner	Special Concern	Stokes

Vascular Plant	<i>Tradescantia virginiana</i>	Virginia Spiderwort	Threatened	Rockingham
Vascular Plant	<i>Trichostema brachiatum</i>	Glade Bluecurls	Endangered	Rockingham
Vascular Plant	<i>Tsuga canadensis</i>	Eastern Hemlock	Watch List, Rare	Stokes
Vascular Plant	<i>Tsuga caroliniana</i>	Carolina Hemlock	Watch List, Rare	Stokes
Vascular Plant	<i>Valerianella umbilicata</i>	Woodland Cornsalad	Watch List, Rare	Stokes
Vascular Plant	<i>Verbesina virginica</i> var. <i>virginica</i>	Frostweed	Watch List, Rare	Rockingham
Vascular Plant	<i>Viola tripartita</i>	Threarted Violet	Watch List, Rare	Stokes

APPENDIX D. Comments received by the public on the Draft RP/EA

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September 9, 2019

The Honorable Thomas D. Schroeder
Chief Judge
United States District Court for the Middle District of North Carolina
c/o Anita Engle, Case Manager
anita_engle@ncmd.uscourts.gov

Sara Ward
U.S. Fish and Wildlife Service
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**Re: Dan River Coal Ash Spill Consent Decree and Draft Restoration Plan and
Environmental Assessment (the “Draft Plan”)**

Dear Chief Judge Schroeder, Ms. Ward, and Ms. Lingenfelser,

The Southern Environmental Law Center submits these comments on the Draft Plan and Consent Decree¹ on behalf of itself and its partners, the Dan River Basin Association, Dan Riverkeeper, Good Stewards of Rockingham, Roanoke River Basin Association, and Stokes County Branch of the North Carolina NAACP. These documents and the supporting information publicly available do not adequately allow the public to assess the ecological or recreational value of the restoration projects completed or anticipated. Moreover, the Trustees have deprived the public of a meaningful opportunity—at a meaningful point in decisionmaking—to participate in evaluation and selection of restoration projects.

We generally support the types of projects described in these documents, but the fundamental problem here is that there is simply no way to determine whether the proposed projects are adequate to compensate the public for the environmental harms Duke Energy caused with the Dan River coal ash spill. The Trustees can and must do better.

I. Introduction.

On February 2, 2014, Duke Energy spilled 39,000 tons of coal ash and 27 million gallons of contaminated water into the Dan River. *See* U.S. Fish and Wildlife Service, *Dan River Coal Ash Spill: Draft Restoration Plan and Environmental Assessment*, available at

¹ Filed on July 18, 2019 in *United States v. Duke Energy Carolinas*, 1:19-cv-00707 (M.D.N.C.).

https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=984 (last accessed September 9, 2019). Ash and contaminated water polluted the river 70 miles downstream, harming communities all the way from Eden, North Carolina to Virginia Beach, Virginia. *Id.* Coal ash coated the surface of the river and washed up onto the riverbanks. For months, Virginia Beach suspended withdrawing drinking water from a lake downstream of the spill. *See* Kathy Hieatt, “Va. Beach to resume pumping water after coal ash spill,” *Virginian-Pilot* (May 20, 2014), *available at* https://www.pilotonline.com/government/local/article_66100a90-d6a6-5058-9b47-3ac02ec0fe32.html (last accessed September 9, 2019). North Carolina warned people not to come into contact with the water. There were public advisories against fishing and recreation in the river. *See* Draft Plan at 13.

Almost immediately after the spill, the Trustees commenced the Natural Resources Damage and Restoration (“NRDAR”) process, under the federal Comprehensive Environmental Cleanup and Liability Act, the Clean Water Act, and their implementing regulations. *See generally*, 42 U.S.C. 9601 et seq.; 33 U.S.C. 1251–1376; 43 C.F.R. Part 11. The NRDAR process is designed to make the public whole again after a toxic spill by requiring the polluter to restore or replace the natural resources that were harmed. The Consent Decree and Draft Plan submitted to the Court represent the culmination of this five-year process to determine what restoration projects Duke Energy will be required to complete to compensate the public for the harm it caused by the Dan River spill in 2014.

As explained below, we have identified several weaknesses in the Consent Decree and Draft Plan, and we respectfully request the Trustees to address those weaknesses before the Court approves the Consent Decree. Most significantly, the Draft Plan lacks the detail necessary for the public and the Court to evaluate whether the projects in the Draft Plan are appropriate to satisfy the goals of the NRDAR process. The Trustees must do more to justify the proposed plan. At the very least, the Trustees need to revise the Draft Plan to include their analysis and re-notice it for public comment, so the public and the Court can meaningfully evaluate the Trustees’ proposed restoration plan. Importantly, the Trustees need to demonstrate through their analysis that the restoration projects Duke Energy has completed or plans to complete will compensate for the harm their Dan River spill caused—or, they need to revise the Consent Decree and Draft Plan to account for additional restoration.

II. The Trustees failed to provide sufficient information or explanation to justify their restoration plan.

The Trustees have asked the public, and the Court, to perform an impossible task. The public has been told to evaluate and comment upon a draft restoration plan and environmental assessment without the essential information that was supposed to have formed the basis of the Trustees’ determination. Instead of showing their work and allowing the Court and the public to evaluate whether the proposed restoration projects are enough to make up for the harm caused by the coal ash spill, the Trustees are asking the public to take their word for it. We have scoured the documents for the calculations and analyses that are supposed to inform and justify the conclusions in the plan, but they are not included; we have also requested them from the participating agencies, but we have not received them, if they exist at all. In the absence of any calculations or detailed analyses, the public is left to assume the Trustees have given Duke

Energy credit for projects it has already done, without regard to how those projects correlate to the environmental damage it caused. As explained below, this approach undermines the purpose of public participation and also is contrary to the federal regulations that govern the NRDAR process. *See* 43 C.F.R. Part 11.

Federal regulations call for the Trustees to come up with a restoration plan after completing a rigorous assessment of the lost or injured natural resources and the proposed restoration alternatives. Throughout the “assessment phase” of the NRDAR process, the Trustees are expected to use various methodologies to quantify the extent of the harm and the value of the proposed restoration projects so that the Trustees can ultimately determine how much and what kind of restoration is required. Once this assessment is complete, in the “post-assessment phase,” the Trustees must show their work by preparing a Report of the Assessment, which includes all documentation supporting their determinations. Finally, and most importantly, they must propose to the public for comment a draft restoration plan that explains the Trustees’ rationale for their selection.

For example, in the quantification phase (43 C.F.R. §§ 11.70-73), the Trustees are expected to “quantify the effects of the discharge or release on the injured natural resources for use in determining the appropriate amount of compensation.” 43 C.F.R. § 11.70(b). The regulations go on to prescribe the steps “necessary to quantify the effects[.]” including measuring the extent and degree to which the resource or service has been impacted, as well as baseline (*i.e.* pre-spill) conditions. *Id.* at §§ 11.71-11.72. Upon completion of the quantification phase, the Trustees make a determination as to the extent of the harm caused by the toxic spill. This determination, including the information that forms the basis of the determination, must be included in the Report of the Assessment. *See id.* at § 11.70(d).

The quantification phase is an essential part of the NRDAR process because it defines the scope of the required restoration. However, in the draft restoration plan, a discussion of the extent of the harm caused by the coal ash spill is conspicuously absent. The Trustees very briefly and generally list injured natural resources (e.g. Draft Plan at 10: “stream and wetland habitat”), but fail to provide any detail quantifying the extent of the injury. Taking stream and wetland habitat as an example, the public needs to know and the regulations require: how many acres of habitat were impacted? What is the total volume of stream water impacted? How does the harmed habitat compare to what was there before (the baseline)? What services were normally provided by the harmed stream and wetland habitat? To what extent were these services disturbed by the spill? To what extent can the habitat recover? If restoration (as opposed to replacement) is possible, how long will it take?

The answers to the questions posed in the quantification phase are necessary for the next part of the assessment: the damage determination. The whole point of the NRDAR process is to devise a restoration plan that makes the environment and the public whole again. The Trustees need to demonstrate that the restoration alternatives are enough to make up for the harm caused by the spill. To do this, they need to know the scope of the harm, determined in the previous quantification phase, and they also need to know value of the proposed restoration alternatives, determined in the damages phase. However, based on the information in the draft restoration plan, it appears the Trustees have failed to evaluate the proposed restoration alternatives in

comparison with the lost or injured natural resources. Without this analysis, the public and the Court cannot know how the restoration projects stack up against the harm, and the public has no ability to determine whether the Trustees required enough.

As one example, the Trustees indicate the Mayo River Conservation project benefits habitat, but the Trustees provide no explanation of how this project counts toward the required restoration. Although the draft plan includes detail on the amount of land conserved (618.72 acres) and its location, and it summarily states that the project “protects a significant aquatic habitat with high quality water and with at least 10 rare and listed aquatic species and adjacent terrestrial natural heritage features” (Draft Plan at 18), the Draft Plan provides no information that would enable the public to evaluate whether the project is appropriate to restore the injured habitat. For example, how does the conserved habitat compare to the baseline habitat in size or quality? The Trustees claim to have conducted a Habitat Equivalency Analysis, but that analysis is not provided. Nor does the NRDAR explain whether the project has the same value as the lost habitat. An important part of this analysis would be to determine whether the land chosen for conservation could be developed. If development were impossible (for example, the land is undevelopable wetlands), the project has very little conservation value because the habitat would be conserved regardless. The Trustees have simply not provided the information necessary to evaluate the value of these projects.

The Fish and Wildlife Service’s NRDAR policy also requires the Trustees to document their assessment and make it available to the public. It requires the Trustees to “describe[] the injury determination, injury quantification, and damages quantification in detail” in the Restoration and Compensation Determination Plan (“RCDP”):

At the conclusion of the assessment activities, we issue a report of findings that documents the results of the NRDAR process with respect to quantifying natural resource injuries and identifying appropriate restoration. ... The report of findings is called the “Report of Assessment,” which consists of many documents produced during the NRDAR, including the Restoration and Compensation Determination Plan (RCDP). The RCDP describes the injury determination, injury quantification, and damages quantification in detail. ***We make the draft RCDP available for public review and comment, and the final RCDP becomes the basis for the NRDAR claim.*** It can support a referral to the Department of Justice to file litigation to recover natural resource damages. While the RCDP evaluates restoration options and uses those options to develop the damages, it does not select the restoration options. Under CERCLA, a different document, the Restoration Plan—which should be largely based on the RCDP—is developed for the trustees to select restoration options to implement with recovered damages.

U.S. Fish and Wildlife Service, *Natural Resource Damage Assessment and Restoration (NRDAR) Activities*, 573 FW 3, Section 3.7(C)(2) (July 10, 2018), *available at* <https://www.fws.gov/policy/573fw3.html> (last visited Sept. 3, 2019) (emphasis added) (“FWS NRDAR Policy”). This policy “applies to all Service employees with responsibilities for conducting NRDAR activities.” *Id.* at Section 3.2. However, it appears the Trustees skipped the step of developing and putting out for public comment a RCDP, in which the Trustees were also

to identify and assess restoration alternatives. *See* 43 C.F.R §§ 11.80(c), 11.81; FWS NRDAR Policy at Section 3.7(C)(2). Instead, the Trustees are presenting their analysis and restoration alternatives to the public for the first time in the restoration plan, in the post-assessment phase.

Despite the clear and detailed procedure set forth in the regulations and agency policy, the Trustees have failed to present enough information to demonstrate they sufficiently assessed the injuries and determined damages.

In an effort to obtain the information we need to comment on the Draft Plan, we have asked the Trustees multiple times to share their documentation with us. We have asked Trustees for this information in person at information sessions, on the phone, multiple times by e-mail, and finally, by formal public information request.² The only additional information the Trustees provided was a link to a monitoring report on Duke Energy's website, which does not contain the Trustee's quantification determination or damages determination that we requested.

Not only have the Trustees failed to follow the process laid out in federal regulations and agency policy, but they also failed to follow the process they agreed upon with Duke Energy in their Funding and Participation Agreement. *See* Funding and Participation Agreement between NC, VA, US Dep't of Interior, and Duke Energy, June 9, 2014, *available at* https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=984 (last visited Sept. 4, 2019). In this agreement, the parties recognized the importance of expedited restoration and set up a process for the implementation of early restoration projects. The Trustees and Duke Energy contemplated that draft restoration plans may be developed on a project-by-project basis, as the NRDAR process progressed, in the interest of restoring the injured natural resources as quickly as possible. The parties agreed those restoration plans would be made available for public review and comment prior to the implementation of an early restoration project. *See* Agreement at Section X(B)-(D).

Almost all the projects in the draft restoration plan are early restoration projects and have already been completely implemented. However, the Trustees did not follow the process set forth in the Funding and Participation Agreement—they did not issue draft restoration plans for early restoration projects; instead, the Trustees presented these restoration projects to the public for the first time now with this Draft Plan, long after they have been completed. Most importantly, the Trustees have not documented restoration credits for early restoration projects. In the Funding and Participation Agreement, the Trustees agreed:

Upon adoption by the Trustees of the quantification of the restoration benefits accruing from the early restoration projects that have been implemented, the Trustees shall credit those benefits toward the amount of restoration ultimately determined to be owed by Duke Energy and such credit shall be documented in any settlement agreement resolving the Trustees' NRD claims against Duke Energy resulting from the Release from the Facility.

Agreement at Section X(D). But neither the Consent Decree nor the Draft Plan contains any quantification of restoration owed by Duke Energy or any quantification of the benefits accruing

² *See* requests, attached as Exhibit 1.

from the early restoration projects. The Trustees have left the public to guess at whether the early restoration projects are sufficient.

As a result, the Trustees have failed to provide the needed rational basis for the recommendations made in their draft restoration plan and have not provided a basis to support the conclusion that the proposed restoration projects are sufficient to make up for the harm caused during the Dan River Spill. The NRDAR regulations, as well as agency policy, the Assessment Plan, and the Funding and Participation Agreement, call for quantified assessments and documentation “to ensure that all procedures used in an assessment, performed pursuant to this part, are appropriate, necessary, and sufficient to assess damages for injuries to natural resources.” 43 C.F.R. § 11.13(a). It may be that the projects in the Draft Plan are sufficient to make up for the harm, but the Trustees need to perform and disclose an assessment, based on scientific research and hard data, to support any such determination.

The Court must determine whether the Consent Decree is reasonable, fair, and consistent with CERCLA’s purpose. If the Court lacks the information required to make this determination, it should deny the motion for entry of the consent decree. *See, e.g., U.S. v. Montrose Chemical Corp. of California*, 50 F.3d 741, 747 (9th Cir. 1995) (appeals court vacated district court’s approval of consent decree finding that the “fairness or reasonableness of a \$45.7 million settlement simply cannot be measured” where the special master had “no evidence of the governments’ estimate—preliminary or otherwise—of total natural resource damages.”); *Comm’r of Dep’t of Planning & Nat. Res. v. Century Alumina Co.*, No. CIV. 2005/0062, 2008 WL 4693550, at *6 (D.V.I. Oct. 22, 2008) (“The Court is at a complete loss as to where to begin in its determination [when] DPNR has not provided the Court with any estimations of the past or projected response costs. [...] With the record before it, the Court cannot perform its role of assessing whether the proposed Consent Decree is based on a rational determination of comparative fault.”); *Utah v. Kennecott Corp.*, 801 F. Supp. 553, 568-71 (D. Utah 1992) (court denied joint motion for entry of consent decree involving settlement of state’s claim against mining company for natural resource damages to groundwater; court found proposed decree deficient in three respects: (1) state failed to provide sufficient foundation for its determination that groundwater natural resource could not be restored and therefore full remediation would not be required, thus decree failed to satisfy CERCLA’s remedial purposes, (2) decree failed to require substantial protection of natural resources from further contamination, thus it failed to satisfy CERCLA’s requirement to protect and restore natural resources, and (3) decree incorporated narrow view of proper measure of damages for loss of natural resource, thus it failed to satisfy substantive fairness as required in the CERCLA settlement context).

We respectfully request that the Trustees revise the Draft Plan to include “sufficient detail” for the public, and the Court, to evaluate and comment upon the Draft Plan, and once the Draft Plan is revised, re-notice it for public comment. Specifically, the Trustees must detail their determinations and disclose “all documentation supporting the determinations required in the Injury Determination phase, the Quantification phase, and the Damage Determination phase, and specifically including the test results of any and all methodologies performed in these phases.” 43 C.F.R. § 11.90(c); *see also* 43 C.F.R. §§ 11.38(d)(3), 11.60(c), 11.70(d), 11.80(d); FWS NRDAR Policy at 3.7(C)(2)(a).

III. The Trustees additionally failed to adequately consider alternatives, solicit public comment, perform NEPA review, and plan for operations and maintenance.

In addition to the failure to justify how the restoration actions offset injury, we have identified several other weaknesses in the Draft Plan and Consent Decree:

- *Inadequate selection and analysis of restoration alternatives.* In 2014, the Trustees solicited project ideas from the public. These proposals were compiled by the Trustees in a document that categorized them by restoration goals—for example, avoided habitat loss via land acquisition or protection. *See* Restoration Project Proposals (Dec. 1, 2014), *available at* https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=984 (last visited Sept. 8, 2019). However, the Trustees do not explain in the Draft Plan why proposed projects were not selected. For example, Wildlands Engineering proposed a stream restoration and watershed preservation project for Ravenscroft Stream in Henry County, VA. The Trustees indicated this project satisfied objections for five of seven restoration categories—more than some of the projects that ultimately were selected—so it should have been a reasonable alternative for the Trustees to evaluate. Yet, the Trustees provide no explanation as to why the Ravenscroft project was not considered further. The Draft Plan should be revised to evaluate this project and others.

Moreover, the Draft Plan fails to adequately analyze alternatives. The Draft Plan only considers two projects that were not chosen, and the Trustees rejected both these projects as infeasible out of hand. The only other scenario the Trustees considered was no action. The Trustees should revise the Draft Plan to include a more robust evaluation of the rejected projects and consideration of other reasonable and feasible restoration alternatives, including the projects proposed by the public.

- *No meaningful opportunity to for the public to comment on restoration alternatives.* Public participation is key to the NRDAR process. The Trustees engaged the public early to solicit ideas for potential restoration projects and provide comment on their assessment plan, pursuant to 43 C.F.R. § 11.32(c). However, that is where public participation ended. Instead of requesting comment evaluating and comparing proposed early restoration projects, the Trustees allowed Duke Energy to proceed with chosen projects from among those proposed, without public comment and apparently without regard to how the early restoration projects measured up against the harm Duke Energy caused. The Trustees are presenting the selected projects to the public only now, long after most of the projects in the Draft Plan are complete and too late for public participation to achieve its intended purpose.

The Trustees have gone out of sequence of the regulations and have turned the process on its head. *See, e.g.,* 43 C.F.R. § 11.81 (calling for the Trustees to present a “reasonable” number of alternatives to the public for review and comment earlier in the process). The Trustees also have not followed the process they set up in their own internal policies and Funding and Participation Agreement. *See* FWS NRDAR Policy at Section 3.7(C)(2) (requiring public review and comment on the injury determination, injury quantification,

and damages determination during assessment phase); Agreement at Section X(B) (agreeing that in the event they approve of an early restoration project, “[t]he Trustees will provide a draft restoration plan, proposing the early restoration project(s) as the preferred alternative, for public review and comment” and adoption and implementation of an early restoration project would occur only “[u]pon completion of the public notice and comment process and consideration of any public comments[.]”). While it is desirable to implement restoration quickly, the process—particularly public participation—should not be subverted. The public deserved the opportunity to comment at an earlier stage when feedback could have informed the end result.

When this issue was raised with a Trustee at an information session in August 2019, we were told the scoping process in 2014 and private meetings more generally about spill cleanup with selected “stakeholders” satisfied the public participation requirement. The scoping process and stakeholder meetings are inadequate substitutes for public participation in evaluating and comparing projects for selection once proposed. Moreover, people selected as stakeholders do not necessarily represent the public.

- *Insufficient environmental review under NEPA.* Because the Trustees performed the NRDAR out of sequence, they also shortchanged their required environmental review under the National Environmental Protection Act (NEPA). Actions taken by a federal trustee to restore natural resource or services under CERCLA are subject to NEPA and its implementing regulations. The Trustees should have performed a NEPA analysis before adopting any restoration alternatives, but they failed to do so. Instead, the Trustees contend that environmental review for most projects is not required because Duke Energy already completed them. Again, the Trustees are turning the process on its head. They cannot circumvent federal law by taking steps out of sequence. Had they followed the process they set out in their own Funding and Participation Agreement, environmental impacts should have been studied prior to project implementation. Even if the restoration plan calls for early restoration projects, the Trustees must conduct a NEPA analysis that evaluates the environmental impacts of those early restoration projects and considers alternatives.

The limited environmental review in the Draft Plan is inadequate to satisfy NEPA. The Trustees evaluate impacts of future boat ramps, yet there is no proposed site and no detail on what would be constructed. Instead, the Trustees define the affected environment for the boat ramp project as the entire river basin, which is too large an area to evaluate. Additionally, without project details, it is impossible to evaluate environmental impact. For example, how steep is the site? Will there be new impervious surfaces? Will the boat ramp cause increased runoff and sedimentation throughout the life of the project—not just construction? Will the project increase car traffic or motorboat traffic? Based on the information in the Draft Plan, none of these impacts were assessed.

- *Inadequate damages for operations and maintenance.* The Trustees should revise the Draft Plan and Consent Decree to include additional funds for operation and maintenance of the restoration projects. The restoration achieved by the plan must be permanent, and

Hon. Schroeder, S. Ward, S. Lingenfelser

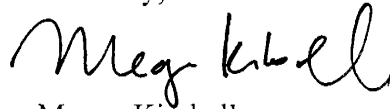
September 9, 2019

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funding to maintain boat ramps and parks is essential to ensuring permanence. The Trustees should determine the cost of operations and maintenance over the life of the project and add that amount to the damages determination.

Thank you for your consideration. Please contact us at (919) 967-1450 or mkimball@selcnc.org if you have any questions or we can provide additional information.

Sincerely,

A handwritten signature in black ink that reads "Megan Kimball". The signature is fluid and cursive, with the first name "Megan" written in a larger, more prominent script than the last name "Kimball".

Megan Kimball
Associate Attorney
Southern Environmental Law Center

On behalf of:

Tiffany Haworth
Executive Director
Dan River Basin Association

Steven Pulliam
Dan Riverkeeper
Good Stewards of Rockingham

Mike Pucci
Executive Director
Roanoke River Basin Association

Rev. Gregory Hairston
President
Stokes County Branch of the NAACP

EXHIBIT 1

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

August 27, 2019

Via Electronic Mail

Laura Leonard
Public Information Officer
North Carolina Department of Environmental Quality
Division of Waste Management
laura.leonard@ncdenr.gov

Re: Public Records Request – Records Concerning the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration (“NRDAR”)

Dear Ms. Leonard:

Pursuant to the North Carolina Public Records Act, N.C. GEN. STAT. §§ 132-1 through 132-10, the Southern Environmental Law Center (“SELC”) requests the following records in the possession or control of the North Carolina Department of Environmental Quality (“DEQ”), dated February 2, 2014 to the date this request is fulfilled:

- The Dan River Natural Resource Trustee Council’s (the “Trustees”) restoration scaling analysis, including but not limited to the Trustees’ evaluation of the ecological service model and the human-use services model, referenced on page 11 of the Draft Restoration Plan and Environmental Assessment (“Draft Plan”);¹
- any Habitat Equivalency Analysis the Trustees generated, relied upon, or referred to, including the analysis referenced on pages 11-12 of the Draft Plan;
- the Trustees’ Sediment Transport Model, referenced on page 12 of the Draft Plan;
- the Trustees’ assessment of lost recreational use and the benefits of the proposed restoration projects for recreational uses, including the Trustees’ benefit-transfer analysis, referenced on page 13 of the Draft Plan;
- the Trustees’ analysis of the ecological uplift of proposed land conservation projects, including but not limited to analysis of the land’s development potential;
- the Trustees’ evaluation of restoration alternatives, including its evaluation of all proposals received from the public;

¹ Dan River Natural Resource Trustee Council, *Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration April 2019 DRAFT* (April 1, 2019), available at https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=984 (last accessed August 23, 2019).

- the Trustees' analysis of its future administrative, operations, and maintenance costs for the restoration projects; and
- All communications between DEQ and Duke Energy, including any of its subsidiaries, regarding the Dan River Coal Ash Spill NRDAR.

If any part of this request is unclear or unduly burdensome, please contact me to discuss the intended scope of the request.

As used in this letter, the term "public records" or "records" includes all written, printed, recorded, or electric documents, materials, communications, correspondence, memoranda, notations, copies, diagrams, charts, tables, spreadsheets, formulas, directives, observations, impressions, drafts, contracts, letters, messages, e-mails, deleted e-mails, emails in personal accounts, mail, notes, records of phone conversations, calendar entries, and text messages in the possession, custody, or control of the Department of Environmental Quality. N.C. GEN. STAT. § 132-1.

Please provide any electronic records in their native file format.

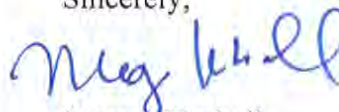
Public records must be provided to anyone requesting their inspection "as promptly as possible" upon payment of any fees, which shall not exceed the actual cost of reproducing the public record. N.C. GEN. STAT. §§ 132-1, 132-6. We ask that you waive or reduce any copying costs to the extent allowed under the Public Records Act because disclosure of the requested materials will serve the public interest by contributing to public understanding of agency decisionmaking about the Dan River Spill NRDAR and is not in the commercial interest of SELC.

If copying fees are not waived, we instead request the opportunity to inspect, examine, and copy all public records identified above. SELC will copy the records itself, and will bring its own copying and/or scanning device to use during our inspection.

If you withhold any responsive information or records, please provide an index describing each item withheld and explaining the statutory exception that you believe applies to justify withholding each document, in sufficient detail to allow us and/or a court to evaluate the application. In the event of deletions or redactions, we request that a reason be stated for each denial or partial denial of access.

Thank you in advance for your assistance. I am available to inspect public records prior to any duplication and willing to discuss other ways to facilitate the production of the requested public records. Please contact me at mkimball@selcnc.org or 919-967-1450 to arrange for inspection, copying, or electronic transmission of the requested public records.

Sincerely,



Megan Kimball
Associate Attorney

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220
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August 27, 2019

Via U.S. Mail and Electronic Mail

Matthew Butts
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Sara Ward
Ecologist
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Re: FOIA Request – Records Concerning the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration (“NRDAR”)

Dear Mr. Butts and Ms. Ward:

Pursuant to the Freedom of Information Act, 5 U.S.C. § 552, and 43 C.F.R. §§ 2.1-2.290, the Southern Environmental Law Center (“SELC”) respectfully requests copies of the following records in the possession or control of the U.S. Fish and Wildlife Service (“FWS”), dated February 2, 2014 to the date this request is fulfilled:

- The Dan River Natural Resource Trustee Council’s (the “Trustees”) restoration scaling analysis, including but not limited to the Trustees’ evaluation of the ecological service model and the human-use services model, referenced on page 11 of the Draft Restoration Plan and Environmental Assessment (“Draft Plan”);¹
- any Habitat Equivalency Analysis the Trustees generated, relied upon, or referred to, including the analysis referenced on pages 11-12 of the Draft Plan;
- the Trustees’ Sediment Transport Model, referenced on page 12 of the Draft Plan;

¹ Dan River Natural Resource Trustee Council, *Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration April 2019 DRAFT* (April 1, 2019), available at https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=984 (last accessed August 23, 2019).

- the Trustees' assessment of lost recreational use and the benefits of the proposed restoration projects for recreational uses, including the Trustees' benefit-transfer analysis, referenced on page 13 of the Draft Plan;
- the Trustees' analysis of the ecological uplift of proposed land conservation projects, including but not limited to analysis of the land's development potential;
- the Trustees' evaluation of restoration alternatives, including its evaluation of all proposals received from the public;
- the Trustees' analysis of its future administrative, operations, and maintenance costs for the restoration projects; and
- All communications between FWS and Duke Energy, including any of its subsidiaries, regarding the Dan River Coal Ash Spill NRDAR.

For the purposes of this request, the term "records" includes all written, printed, recorded, or electronic materials, communications, correspondence, memoranda, notations, copies, diagrams, charts, books, papers, maps, photographs, data, tables, spreadsheets, formulas, directives, observations, impressions, contracts, letters, messages, and mail in the possession, custody, or control of FWS. Please provide any electronic records in native file format.

In addition, we request access to each and every version of a record or document, whether it is a draft, has been electronically deleted, has attachments, bears annotations, etc. Please also include all responsive records generated up to the date of the agency's search for records responsive to this request.

FOIA directs a responding agency to make a "determination" on any request within twenty working days of receipt. 5 U.S.C. § 552(a)(6)(A); 43 C.F.R. § 2.16(a). Pursuant to 43 C.F.R. § 2.25, in addition to making responsive documents available for request, should you determine that certain documents are responsive to this request and choose not to produce them on the basis of any claimed privilege or exemption from disclosure, we request that you produce a detailed list of those documents, including: the date of the document; the authors and recipients; the subject matter of the document; and the basis for the claimed privilege or exemption for disclosure. Further, where a document contains specific information that you claim is exempt or privileged, we request that you simply redact the information so claimed and produce the document in redacted form. The redacted information should be included in the list of privileged or exempt information just described.

Because releasing these records is in the public interest, we request a fee waiver for costs associated with conducting this search. 5 U.S.C. § 552(a)(4)(A)(iii). The disclosure of the requested records is in the public interest because the records will contribute significantly to public understanding of FWS's activities in relation to Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration, including the ongoing review of the draft restoration plan and environmental assessment. The Draft Plan contains little information about the Trustees' analysis; the requested records will enable the public to understand how the Trustees determined the proposed restoration projects were sufficient to compensate the public

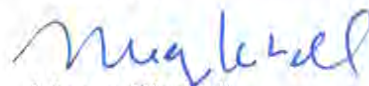
for the natural resources and services injured as a result of the Dan River spill in February 2014. This information will enable the public to understand and meaningfully participate in the NRDAR process.

A fee waiver is appropriate because SELC does not have a commercial interest that would be furthered by the requested disclosure. Courts have recognized that Congress intended FOIA's fee waiver to be "liberally construed in favor of waivers for noncommercial requesters." *McClellan Ecological Seepage Situation v. Carlucci*, 835 F.2d 1282, 1284 (9th Cir. 1987). SELC is a 501(c)(3) non-profit organization working to protect the natural resources of the Southeast and, in particular, to gather, analyze, and disseminate public information about matters of conservation and environmental protection. SELC provides legal representation to other non-profits and public advocacy free of charge. As part of its work, SELC has been actively engaged in protecting the environment of the Southeast for three decades, including water quality and energy matters in North Carolina and Virginia. Currently SELC and its clients are monitoring and participating in the FWS's natural resource damage assessment and restoration process for the Dan River spill. SELC plans to disseminate the records requested by sending directly to its clients and partners that are engaged in work related to the Dan River, as well sharing with the general public by posting on its website or social media or sending to news media.

Should our request for reduced or waived fees be denied, we are prepared to bear the reasonable costs necessary to fulfill this request, although we request that you contact us before processing this request to discuss fees. We reserve our right to appeal a denial of our request for a fee waiver or reduction.

Thank you for your prompt attention to this matter. In the event you deny our request, we ask that you inform us of the grounds for denial and the specific administrative appeal rights that are available. Finally, because the volume of records responsive to our request may be large, we are willing to work with your agency to minimize the work necessary to respond. We are available to review documents prior to any duplication and are willing to discuss other ways to facilitate the production of the requested public records, for instance, by narrowing our request if necessary. Please contact me at (919) 967-1450 or mkimball@selcnc.org to arrange for inspection, copying, and electronic transmission of the requested documents.

Sincerely,



Megan Kimball
Associate Attorney

Cc: Tiffany McClurkin, FOIA Coordinator, foiar4@fws.gov

SOUTHERN ENVIRONMENTAL LAW CENTER

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601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NC 27516-2356

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August 27, 2019

Via U.S. Mail and Electronic Mail

Katie Temple
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Susan Lingenfelser
Supervisory Fish & Wildlife Biologist
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susan_lingenfelser@fws.gov

Re: FOIA Request – Records Concerning the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration (“NRDAR”)

Dear Ms. Temple and Ms. Lingenfelser:

Pursuant to the Freedom of Information Act, 5 U.S.C. § 552, and 43 C.F.R. §§ 2.1-2.290, the Southern Environmental Law Center (“SELC”) respectfully requests copies of the following records in the possession or control of the U.S. Fish and Wildlife Service (“FWS”), dated February 2, 2014 to the date this request is fulfilled:

- The Dan River Natural Resource Trustee Council’s (the “Trustees”) restoration scaling analysis, including but not limited to the Trustees’ evaluation of the ecological service model and the human-use services model, referenced on page 11 of the Draft Restoration Plan and Environmental Assessment (“Draft Plan”);¹
- any Habitat Equivalency Analysis the Trustees generated, relied upon, or referred to, including the analysis referenced on pages 11-12 of the Draft Plan;
- the Trustees’ Sediment Transport Model, referenced on page 12 of the Draft Plan;

¹ Dan River Natural Resource Trustee Council, *Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration April 2019 DRAFT* (April 1, 2019), available at https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=984 (last accessed August 23, 2019).

- the Trustees' assessment of lost recreational use and the benefits of the proposed restoration projects for recreational uses, including the Trustees' benefit-transfer analysis, referenced on page 13 of the Draft Plan;
- the Trustees' analysis of the ecological uplift of proposed land conservation projects, including but not limited to analysis of the land's development potential;
- the Trustees' evaluation of restoration alternatives, including its evaluation of all proposals received from the public;
- the Trustees' analysis of its future administrative, operations, and maintenance costs for the restoration projects; and
- All communications between FWS and Duke Energy, including any of its subsidiaries, regarding the Dan River Coal Ash Spill NRDAR.

For the purposes of this request, the term "records" includes all written, printed, recorded, or electronic materials, communications, correspondence, memoranda, notations, copies, diagrams, charts, books, papers, maps, photographs, data, tables, spreadsheets, formulas, directives, observations, impressions, contracts, letters, messages, and mail in the possession, custody, or control of FWS. Please provide any electronic records in native file format.

In addition, we request access to each and every version of a record or document, whether it is a draft, has been electronically deleted, has attachments, bears annotations, etc. Please also include all responsive records generated up to the date of the agency's search for records responsive to this request.

FOIA directs a responding agency to make a "determination" on any request within twenty working days of receipt. 5 U.S.C. § 552(a)(6)(A); 43 C.F.R. § 2.16(a). Pursuant to 43 C.F.R. § 2.25, in addition to making responsive documents available for request, should you determine that certain documents are responsive to this request and choose not to produce them on the basis of any claimed privilege or exemption from disclosure, we request that you produce a detailed list of those documents, including: the date of the document; the authors and recipients; the subject matter of the document; and the basis for the claimed privilege or exemption for disclosure. Further, where a document contains specific information that you claim is exempt or privileged, we request that you simply redact the information so claimed and produce the document in redacted form. The redacted information should be included in the list of privileged or exempt information just described.

Because releasing these records is in the public interest, we request a fee waiver for costs associated with conducting this search. 5 U.S.C. § 552(a)(4)(A)(iii). The disclosure of the requested records is in the public interest because the records will contribute significantly to public understanding of FWS's activities in relation to Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration, including the ongoing review of the draft restoration plan and environmental assessment. The Draft Plan contains little information about the Trustees' analysis; the requested records will enable the public to understand how the Trustees determined the proposed restoration projects were sufficient to compensate the public


for the natural resources and services injured as a result of the Dan River spill in February 2014. This information will enable the public to understand and meaningfully participate in the NRDAR process.

A fee waiver is appropriate because SELC does not have a commercial interest that would be furthered by the requested disclosure. Courts have recognized that Congress intended FOIA's fee waiver to be "liberally construed in favor of waivers for noncommercial requesters." *McClellan Ecological Seepage Situation v. Carlucci*, 835 F.2d 1282, 1284 (9th Cir. 1987). SELC is a 501(c)(3) non-profit organization working to protect the natural resources of the Southeast and, in particular, to gather, analyze, and disseminate public information about matters of conservation and environmental protection. SELC provides legal representation to other non-profits and public advocacy free of charge. As part of its work, SELC has been actively engaged in protecting the environment of the Southeast for three decades, including water quality and energy matters in North Carolina and Virginia. Currently SELC and its clients are monitoring and participating in the FWS's natural resource damage assessment and restoration process for the Dan River spill. SELC plans to disseminate the records requested by sending directly to its clients and partners that are engaged in work related to the Dan River, as well sharing with the general public by posting on its website or social media or sending to news media.

Should our request for reduced or waived fees be denied, we are prepared to bear the reasonable costs necessary to fulfill this request, although we request that you contact us before processing this request to discuss fees. We reserve our right to appeal a denial of our request for a fee waiver or reduction.

Thank you for your prompt attention to this matter. In the event you deny our request, we ask that you inform us of the grounds for denial and the specific administrative appeal rights that are available. Finally, because the volume of records responsive to our request may be large, we are willing to work with your agency to minimize the work necessary to respond. We are available to review documents prior to any duplication and are willing to discuss other ways to facilitate the production of the requested public records, for instance, by narrowing our request if necessary. Please contact me at (919) 967-1450 or mkimball@selcnc.org to arrange for inspection, copying, and electronic transmission of the requested documents.

Sincerely,



Megan Kimball
Associate Attorney

Cc: Tiffany McClurkin, FOIA Coordinator, foiar4@fws.gov

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

August 27, 2019

Via U.S. Mail and Electronic Mail

Cathy Willis
FWS FOIA Officer
U.S. Fish and Wildlife Service
5275 Leesburg Pike
MS:IRTM
Falls Church, VA 22041
fwhq_foia@fws.gov

Re: FOIA Request – Records Concerning the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration (“NRDAR”)

Dear Ms. Willis:

Pursuant to the Freedom of Information Act, 5 U.S.C. § 552, and 43 C.F.R. §§ 2.1-2.290, the Southern Environmental Law Center (“SELC”) respectfully requests copies of the following records in the possession or control of the U.S. Fish and Wildlife Service (“FWS”), dated February 2, 2014 to the date this request is fulfilled:

- The Dan River Natural Resource Trustee Council’s (the “Trustees”) restoration scaling analysis, including but not limited to the Trustees’ evaluation of the ecological service model and the human-use services model, referenced on page 11 of the Draft Restoration Plan and Environmental Assessment (“Draft Plan”);¹
- any Habitat Equivalency Analysis the Trustees generated, relied upon, or referred to, including the analysis referenced on pages 11-12 of the Draft Plan;
- the Trustees’ Sediment Transport Model, referenced on page 12 of the Draft Plan;
- the Trustees’ assessment of lost recreational use and the benefits of the proposed restoration projects for recreational uses, including the Trustees’ benefit-transfer analysis, referenced on page 13 of the Draft Plan;
- the Trustees’ analysis of the ecological uplift of proposed land conservation projects, including but not limited to analysis of the land’s development potential;

¹ Dan River Natural Resource Trustee Council, *Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration April 2019 DRAFT* (April 1, 2019), available at https://www.cerc.usgs.gov/orda_docs/CaseDetails?ID=984 (last accessed August 23, 2019).

- the Trustees' evaluation of restoration alternatives, including its evaluation of all proposals received from the public;
- the Trustees' analysis of its future administrative, operations, and maintenance costs for the restoration projects; and
- All communications between FWS and Duke Energy, including any of its subsidiaries, regarding the Dan River Coal Ash Spill NRDAR.

For the purposes of this request, the term "records" includes all written, printed, recorded, or electronic materials, communications, correspondence, memoranda, notations, copies, diagrams, charts, books, papers, maps, photographs, data, tables, spreadsheets, formulas, directives, observations, impressions, contracts, letters, messages, and mail in the possession, custody, or control of FWS. Please provide any electronic records in native file format.

In addition, we request access to each and every version of a record or document, whether it is a draft, has been electronically deleted, has attachments, bears annotations, etc. Please also include all responsive records generated up to the date of the agency's search for records responsive to this request.

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Because releasing these records is in the public interest, we request a fee waiver for costs associated with conducting this search. 5 U.S.C. § 552(a)(4)(A)(iii). The disclosure of the requested records is in the public interest because the records will contribute significantly to public understanding of FWS's activities in relation to Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration, including the ongoing review of the draft restoration plan and environmental assessment. The Draft Plan contains little information about the Trustees' analysis; the requested records will enable the public to understand how the Trustees determined the proposed restoration projects were sufficient to compensate the public for the natural resources and services injured as a result of the Dan River spill in February 2014. This information will enable the public to understand and meaningfully participate in the NRDAR process.

A fee waiver is appropriate because SELC does not have a commercial interest that would be furthered by the requested disclosure. Courts have recognized that Congress intended FOIA's fee waiver to be "liberally construed in favor of waivers for noncommercial requesters."

McClellan Ecological Seepage Situation v. Carlucci, 835 F.2d 1282, 1284 (9th Cir. 1987). SELC is a 501(c)(3) non-profit organization working to protect the natural resources of the Southeast and, in particular, to gather, analyze, and disseminate public information about matters of conservation and environmental protection. SELC provides legal representation to other non-profits and public advocacy free of charge. As part of its work, SELC has been actively engaged in protecting the environment of the Southeast for three decades, including water quality and energy matters in North Carolina and Virginia. Currently SELC and its clients are monitoring and participating in the FWS's natural resource damage assessment and restoration process for the Dan River spill. SELC plans to disseminate the records requested by sending directly to its clients and partners that are engaged in work related to the Dan River, as well sharing with the general public by posting on its website or social media or sending to news media.

Should our request for reduced or waived fees be denied, we are prepared to bear the reasonable costs necessary to fulfill this request, although we request that you contact us before processing this request to discuss fees. We reserve our right to appeal a denial of our request for a fee waiver or reduction.

Thank you for your prompt attention to this matter. In the event you deny our request, we ask that you inform us of the grounds for denial and the specific administrative appeal rights that are available. Finally, because the volume of records responsive to our request may be large, we are willing to work with your agency to minimize the work necessary to respond. We are available to review documents prior to any duplication and are willing to discuss other ways to facilitate the production of the requested public records, for instance, by narrowing our request if necessary. Please contact me at (919) 967-1450 or mkimball@selcnc.org to arrange for inspection, copying, and electronic transmission of the requested documents.

Sincerely,



Megan Kimball
Associate Attorney

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 434-977-4090

201 WEST MAIN STREET, SUITE 14
CHARLOTTESVILLE, VA 22902-5065

Facsimile 434-977-1483

September 9, 2019

Via Electronic Mail

Natalie Womack
FOIA Officer
Virginia Department of Environmental Quality
natalie.womack@deq.virginia.gov

Re: FOIA Request – Records Concerning the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration (“NRDAR”)

Dear Ms. Womack:

Pursuant to the Virginia Freedom of Information Act, V.A. CODE §§ 2.2-3700 through 2.2-3715, the Southern Environmental Law Center (“SELC”) requests the following records in the possession or control of the Virginia Department of Environmental Quality (“DEQ”), from February 2, 2014 to the date the agency begins its search for records:

- The Dan River Natural Resource Trustee Council’s (the “Trustees”) restoration scaling analysis, including but not limited to the Trustees’ evaluation of the ecological service model and the human-use services model, referenced on page 11 of the Draft Restoration Plan and Environmental Assessment (“Draft Plan”);¹
- any Habitat Equivalency Analysis the Trustees generated, relied upon, or referred to, including the analysis referenced on pages 11-12 of the Draft Plan;
- the Trustees’ Sediment Transport Model, referenced on page 12 of the Draft Plan;
- the Trustees’ assessment of lost recreational use and the benefits of the proposed restoration projects for recreational uses, including the Trustees’ benefit-transfer analysis, referenced on page 13 of the Draft Plan;
- the Trustees’ analysis of the ecological uplift of proposed land conservation projects, including but not limited to analysis of the land’s development potential;
- the Trustees’ evaluation of restoration alternatives, including its evaluation of all proposals received from the public;

¹ Dan River Natural Resource Trustee Council, *Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration April 2019 DRAFT* (April 1, 2019), available at https://www.cerc.usgs.gov/orca_docs/CaseDetails?ID=984 (last accessed August 23, 2019).

- the Trustees' analysis of its future administrative, operations, and maintenance costs for the restoration projects; and
- All communications between DEQ and Duke Energy, including any of its subsidiaries, regarding the Dan River Coal Ash Spill NRDAR.

If any part of this request is unclear or unduly burdensome, please contact me to discuss the intended scope of the request.

As used in this letter, the term "public records" or "records" includes all written, printed, recorded, or electric documents, materials, communications, correspondence, memoranda, notations, copies, diagrams, charts, tables, spreadsheets, formulas, directives, observations, impressions, drafts, contracts, letters, messages, e-mails, deleted e-mails, emails in personal accounts, mail, notes, records of phone conversations, calendar entries, and text messages in the possession, custody, or control of the Department of Environmental Quality. V.A. CODE § 2.2-3701.

Please provide any electronic records in their native file format.


A request for public records must be responded to "promptly," within five business days of receipt of the request, and may charge fees, which shall not exceed the actual cost of reproducing the public record. V.A. CODE § 2.2-3704. We ask that you waive or reduce any copying costs because disclosure of the requested materials will serve the public interest by contributing to public understanding of agency decisionmaking about the Dan River Spill NRDAR and is not in the commercial interest of SELC.

If copying fees are not waived, we instead request the opportunity to inspect, examine, and copy all public records identified above. SELC will copy the records itself and will bring its own copying and/or scanning device to use during our inspection.

If you withhold any responsive information or records, please provide an index describing each item withheld and explaining the statutory exception that you believe applies to justify withholding each document, in sufficient detail to allow us and/or a court to evaluate the application. In the event of deletions or redactions, we request that a reason be stated for each denial or partial denial of access.

Thank you in advance for your assistance. I am available to inspect public records prior to any duplication and willing to discuss other ways to facilitate the production of the requested public records. Please contact me at jgendzier@selcva.org or 434-977-4090 to arrange for inspection, copying, or electronic transmission of the requested public records.

Sincerely,

A handwritten signature in cursive script that reads "Jonathan M. Gendzier".

Jonathan M. Gendzier
Staff Attorney
Southern Environmental Law Center
201 W. Main Street, Ste. 14
Charlottesville, VA 22902
(434) 977-4090
jgendzier@selcva.org

cc:

Diana Adams, DEQ

From: [Megan Kimball](#)
To: ["Ward, Sara"](#)
Cc: [Amy Horner](#); [Susan Lingenfelter](#)
Subject: RE: [EXTERNAL] RE: Dan River draft restoration plan
Date: Tuesday, August 20, 2019 12:57:45 PM

Hi Sara,

Thank you very much for sharing this information. Just to confirm, are you saying that the linked report ([here](#)) is the only document that is responsive to my request from Aug. 7? Are there any other documents that contain the information I asked for?

I plan to also submit information requests for these documents, but I know that sometimes an informal request can be more efficient for everyone involved.

Thanks for your help,
Megan

Megan Kimball
Associate Attorney | Southern Environmental Law Center
601 West Rosemary Street, Suite 220 | Chapel Hill, NC 27516-2356
T: 919-967-1450
F: 919-929-9421
E: mkimball@selcnc.org
<http://www.southernenvironment.org>

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From: Ward, Sara [mailto:sara_ward@fws.gov]
Sent: Tuesday, August 20, 2019 11:39 AM
To: Megan Kimball
Cc: Amy Horner; Susan Lingenfelter
Subject: Re: [EXTERNAL] RE: Dan River draft restoration plan

Good morning, Megan.

Thanks for your interest in the Dan River Natural Resource Damage Assessment and Restoration. I understand you've already spoken with Amy Horner Hanley last week (I apologize for not responding sooner as I was out of the office on leave).

The report with data the trustees relied upon (as well as other sources identified in the Damage Assessment Plan) we discussed at the information session is now linked on the webpage for the Dan River Coal Ash Spill NRDAR. The presentation and posters from those meetings have also been added for reference.

Please direct any comments on the Draft Restoration Plan / Environmental Assessment to me or Susan Lingenfelter (copied here).

Take care, Sara

Sara E. Ward
U.S. Fish and Wildlife Service
100 Conservation Way / P.O. Box 1969
Manteo, NC 27954
(252) 473-1132 ext. 243
sara_ward@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

On Tue, Aug 13, 2019 at 10:02 AM Megan Kimball <mkimball@selcnc.org> wrote:

Good morning Sara,

Just writing to follow up—will you be able to share this information?

Thanks for your help,
Megan

Megan Kimball
Associate Attorney | Southern Environmental Law Center
601 West Rosemary Street, Suite 220 | Chapel Hill, NC 27516-2356
T: 919-967-1450
F: 919-929-9421
E: mkimball@selcnc.org
<http://www.southernenvironment.org>

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From: Megan Kimball
Sent: Wednesday, August 07, 2019 3:51 PM
To: 'sara_ward@fws.gov'
Subject: Dan River draft restoration plan

Hi Sara,

It was nice to meet you last night. Thank you very much for answering all my questions. I tried to find the information you mentioned on Duke Energy's website but am having trouble. Could you please send me the Trustee's analysis of the damages and the projects?

Specifically, we would like to be able to review the Trustees' damages determination, referenced on page 11 of the draft plan; the Trustees' restoration scaling analysis, including your evaluation of the ecological service model and the human-use services model; the Habitat Equivalency Analysis; and the benefit transfer evaluation.

We would also like to review the Trustees' evaluation of the suitability of restoration alternatives to offset injuries to natural resources and services resulting from the spill. The information in the draft plan (starting on p. 15) is helpful but conclusory—we would like to review the analysis underlying your determination so we can better understand whether the proposed alternatives are equivalent to the natural resources that were damaged during the spill.

Thanks for your help,
Megan

Megan Kimball
Associate Attorney | Southern Environmental Law Center
601 West Rosemary Street, Suite 220 | Chapel Hill, NC 27516-2356
T: 919-967-1450
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E: mkimball@selcnc.org
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Ward, Sara <sara_ward@fws.gov>

Dan River Draft Restoration Plan and Environmental Assessment available for public review through 9/9/19

Fri, Aug 2, 2019 at 4:58 PM

[REDACTED]
To: "Ward, Sara" <sara_ward@fws.gov>

There is a problem with the Dan River contamination and coal ash in general.
I sent NC DENR a comment during the legal comment period. ----crickets
The compound is so harmful and politically incorrect that the EPA and our "Government" chooses to ignore it. In one case where I took a sample and had it analyzed by an EPA certified lab, and submitted it to Region IV EPA, the only explanation possible for what happens next is that someone forced the lab to "amend " their findings(falsify lab results)
The problem--- a monster called 2378 tetrachlorodibenzodioxin more commonly known as TCDD.
(think agent orange and/or the old herbicide farmers used called 24D)
All coal ash has it. Almost all combustion products have it. It isn't suspected of causing cancer--
IT CAUSES IT. It isn't suspected of being mutagenic , IT IS MUTAGENIC, SAME with TERATOGENIC One spoonful in Lake Hickory
would cause 50% of the folks using the water to develop cancer.
The latency period is around 15 years.

[Quoted text hidden]



Ward, Sara <sara_ward@fws.gov>

Dan River Draft Restoration Plan and Environmental Assessment available for public review through 9/9/19

Sat, Aug 3, 2019 at 9:44 AM

[REDACTED]
To: "Ward, Sara" <sara_ward@fws.gov>

The CSI superfund site in Caldwell County remediation plan is still in the " test and observe " stage----after 31 years. The problem with all our environmental woes is that political solutions are being substituted for scientific solutions.

[Quoted text hidden]



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Fwd: NEW PROJECT-EXPEDITED REVIEW-USFWS Dan River Coal Ash Spill, DEQ #19-087F

Howard, Janine <janine.howard@deq.virginia.gov>
To: Sara_Ward@fws.gov, Susan_Lingenfelter@fws.gov

Mon, Aug 5, 2019 at 9:58 AM

Good Morning Sara and Susan,

DEQ's Office of Environmental Impact Review is coordinating a review of the Dan River Coal Ash Spill Draft Restoration Plan and EA. The Virginia Department of Conservation and Recreation has requested GIS shapefiles or the latitude/longitude of possible boat launch sites in Virginia in order to aid their review (see below email). Are specific locations for possible boat launch sites available at this time?

Janine Howard
Environmental Impact Review Coordinator
Virginia Department of Environmental Quality
[1111 East Main Street, Suite 1400](#)
[Richmond, VA 23219](#)
804-698-4299

For program updates and public notices please subscribe to Constant Contact: <https://lp.constantcontact.com/su/MVcCump/EIR>

----- Forwarded message -----

From: **nhreview, rr** <nhreview@dcv.virginia.gov>
Date: Mon, Aug 5, 2019 at 8:59 AM
Subject: NEW PROJECT-EXPEDITED REVIEW-USFWS Dan River Coal Ash Spill, DEQ #19-087F
To: Janine Howard <Janine.Howard@deq.virginia.gov>

Hello Janine,

Before being able to begin the review process for this project, it would be preferred if we could be given access to shapefiles or lat/long coordinates of the boat launch sites for the Dan River restoration project. The map, Attachment A, for this project that was included in the draft Restoration Plan and Environmental Assessment shows an overview for the existing and potential sites but the exact locations for these sites were not included. Thank you so much and please let us know if you can provide these locations for these boat launches by replying to this e-mail.

Sincerely,

Brandon Gravett

--

Brandon Gravett

Project Review Assistant

Virginia Natural Heritage Program

Virginia Department of Conservation and Recreation

[600 East Main Street, Richmond VA](#)

(804) 371-2672 (o)



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River draft restoration plan

Megan Kimball <mkimball@selcnc.org>

Wed, Aug 7, 2019 at 3:50 PM

To: "sara_ward@fws.gov" <sara_ward@fws.gov>

Hi Sara,

It was nice to meet you last night. Thank you very much for answering all my questions. I tried to find the information you mentioned on Duke Energy's website but am having trouble. Could you please send me the Trustee's analysis of the damages and the projects?

Specifically, we would like to be able to review the Trustees' damages determination, referenced on page 11 of the draft plan; the Trustees' restoration scaling analysis, including your evaluation of the ecological service model and the human-use services model; the Habitat Equivalency Analysis; and the benefit transfer evaluation.

We would also like to review the Trustees' evaluation of the suitability of restoration alternatives to offset injuries to natural resources and services resulting from the spill. The information in the draft plan (starting on p. 15) is helpful but conclusory—we would like to review the analysis underlying your determination so we can better understand whether the proposed alternatives are equivalent to the natural resources that were damaged during the spill.

Thanks for your help,

Megan

Megan Kimball**Associate Attorney | Southern Environmental Law Center****601 West Rosemary Street, Suite 220 | Chapel Hill, NC 27516-2356**

T: 919-967-1450

F: 919-929-9421

E: mkimball@selcnc.org<http://www.southernenvironment.org>**PRIVILEGE AND CONFIDENTIALITY NOTICE**

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Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Comment on NRDAR

Jenny Edwards [REDACTED]

Thu, Aug 8, 2019 at 2:17 PM

To: Sara Ward <Sara_Ward@fws.gov>

Hi Sara,

Is there an online place where people can suggest where to site a river access as part of the NRDAR process?

It was great to see you last night!

--

Jenny Edwards

Program Manager

Dan River Basin Association
[REDACTED]

"Said the river: imagine everything you can imagine, then keep going."

- Mary Oliver



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River access

Lucas Conkle [REDACTED]

Fri, Aug 9, 2019 at 2:10 PM

To: "Ward, Sara" <sara_ward@fws.gov>

Ms. Ward

It is my understanding that you are seeking public input on possible new access for the Dan River. I would suggest 3 new access points for consideration; 2 on the Dan and 1 on the Smith River. All access would improve recreational use in the basin.

First, on N.C. 89/ Lynchburg road. This would put a much needed access at the state of one of the most popular places in Stokes Co to paddle (which is popular despite the need to currently find a way to reach the river at bridge crossing without a proper access) as well as opening the underutilized section of river upstream of the 89 bridge to Harts access at the N.C. 704 bridge.

I would also suggest an access somewhere between mile 100 and 101. This would take a 10 mile section (with the competition of the Matrimony Creek/Klyce St access) and turn into two, much more manageable 5 mile sections. There are many important navigation structures in this stretch of river as well as one of the more unique rapids (Eagle Falls) which are seldom experienced due to the long nature of this trip.

Lastly, I would suggest an access near mile 60 of the Smith River. That would give people a chance to takeout on the upper Smith without a long lake paddle to a takeout. It would also make it easier for people to enjoy the upper most reaches of Philpott Lake without a lengthy paddle.

Thank you for your time in reading this and thank you for anything you can do to improve recreation in the basin.

Lucas Conkle
Eden, NC



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Comment on NR DAR

Jenny Edwards [REDACTED]

Fri, Aug 9, 2019 at 9:38 AM

To: "Ward, Sara" <sara_ward@fws.gov>

Cc: Susan Lingenfelter <susan_lingenfelter@fws.gov>, "McRae, Brian J" <brian.mcrae@ncwildlife.org>

Thanks Sara - emails coming your way, I'm sure!

Draper Landing is popular with fishermen, but I'm not sure how much paddlers actually use it. The City may have numbers and outfitters, like Three Rivers Outfitters, will know how many people they put on the river there. It is located near an under-served community for sure.

We have at least one "shovel ready" site at Planters Road (18 acres property secured, approved by County Commissioners as a river access, MOU between DRBA and County in place, and waiting for river access development). It's a vital link between Mayodan and Madison accesses and Settle Bridge Access.

There is also very high interest from Carolina Canoe Club, Triad Paddling Association, Get:Outdoors, REI, and lots of individual paddlers for a Stokes Co site that would require a property acquisition.

Appreciate all you are doing!

Ward, Sara

August 9, 2019 at 9:12 AM via Postbox

Hi, Jenny.

Just send all suggestions to my email (and feel free to let others know, too). If you have a chance, I'd be interested in hearing your thoughts on the history of Drapers landing and whether there is interest support for expanded facilities there. The trustees have been working with Duke to try and secure a site between eden and Danville for improved access, but it has been hampered by site constraints and landowner willingness.

Great seeing you Wednesday, too. Very exciting news about the landowner agreements near Lindsey Bridge!! Way to go!

Sara

Sara E. Ward
U.S. Fish and Wildlife Service
100 Conservation Way / P.O. Box 1969
Manteo, NC 27954
(252) 473-1132 ext. 243
sara_ward@fws.gov

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Jenny Edwards

August 8, 2019 at 2:17 PM via Postbox

10/1/2019

DEPARTMENT OF THE INTERIOR Mail - [EXTERNAL] Comment on NRDAR

Hi Sara,

Is there an online place where people can suggest where to site a river access as part of the NRDAR process?

It was great to see you last night!

[Quoted text hidden]



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River Access

Fletcher, Tammella L., VBAWSAL [REDACTED]
To: "sara_ward@fws.gov" <sara_ward@fws.gov>

Fri, Aug 9, 2019 at 12:12 PM

Good day,

I am writing to submit a comment on a new Dan River Access. The Dan is my home river with much beauty and historical significance. I am requesting any new site access be located at the 89/Lynchburg/Big Creek area. This put in for most of our boating (kayaking, SUP) is very dangerous and hazardous in the best of conditions. Better access would offer the opportunity for recreational boaters to enjoy the river. As I am sure you are aware, most boaters are very cognizant of environmental protections and often take it upon themselves to help maintain these accesses.

Thank you for taking this under consideration,

Kindest regards,

Tammy Fletcher



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] NRDAR public comments Dan River

to: sara_ward@fws.gov

Fri, Aug 9, 2019 at 11:10 AM

Sara Ward
U.S. Fish and Wildlife

I am a life long paddler and work in the paddle industry. I have paddled most of the Dan River from Va to Danville. The Dan River has a wide variety of river sections and degrees of difficulty. The section of river from 268/89 past Hanging Rock State Park is one of the most beautiful and popular sections of this river river. I paddle it on a regular basis. It passes by the site of Upper Sauratown village site populated for several hundred years by the Suara Indians. The Saura Indians left there mark on the river by carving cupules in a rock in the river that you float by in your canoe or kayak just like they did hundreds of years ago. There are cliffs and bluffs on this river like no other river and the wild life is phenomenal. There osprey, otters, turkey, deer and bear observed here frequently. The take out for this section is maintained by Hanging Rock State Park.

The problem with accessing this section of the Dan River is the put-in at 268/898. Presently there is just space for a couple of cars and many people park on property that is marked NCDOT No Trespassing. I feel strongly that the Dan River needs an access in Stokes County at the [89/268 Lynchburg Road/](#) Big Creek intersection. The intersection is currently used by many private boaters and they risk injury lower boats and gear down a long steep embankment. This section is a premier section of river capped by a take out at Hanging Rock State Park and should have an improved put-in just for that fact. Not to mention that improved put-in for this section would be a major economic generator for Stokes County.

There are already improved put in/take outs along the Dan River. For about 40 river miles there are improved access except for this premier section right in the middle of those 40 miles. And it is arguably one of the most scenic and culturally significant sections.

I know that there are landowner issues with any access. But there seems to be ample land available that is owned by the NCDOT along 89 that is now used for the primitive access that could be improved.

Thank you for your consideration,

Eric Juday



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River access

john lea [REDACTED]

Fri, Aug 9, 2019 at 1:43 PM

To: "sara_ward@fws.gov" <sara_ward@fws.gov>

The Dan River is very important to me. I paddle and fish there regularly. I believe that an access near the hwy 89 bridge is the easiest and best place for an improved River access. Thank you for your time and efforts on this matter. John Lea [REDACTED]

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Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River Access

Jo Andra Proia [REDACTED]
To: sara_ward@fws.gov

Fri, Aug 9, 2019 at 2:58 PM

Hello Sara,

I am writing to ask that you please consider adding an access to the Dan River at the intersection of highway 89 and Lynchburg Road where Big Creek feeds into the Dan River near Hanging Rock State Park in Danbury, NC. (photo attached)

The current only "public" access that is available all year is not a safe entry into this very important section of river. I paddle many sections of the Dan and this is by far the most beautiful section. Adding a put in here will also add a take out for the section above.

There are historically significant areas we paddle past on the 89 section, including the "cupules" rock and settlement of the Sauratown Indians as well as the "famous" Demon Rock. (photos attached) I also included a link to an article about the "cupules rock." The specific section is about halfway down the page. <https://stokesoutdoors.blogspot.com/?fbclid=IwAR1nELHnaZmLqvJrYbvyBE9drZiNOM2laQiAznHj5b1paX6q9B1y915hyuE>

The current put in we are forced to use when the local outfitter is closed (they are only open a very limited certain months of the year and only certain times of day), is under the 89 bridge. Last fall I was putting onto the river very carefully (being highly aware of the dangerous access) and still fell and tore my mcl and meniscus and was subsequently in rehab for 8 months and my knee will never be the same. I make my living paddling and guiding and was out of commission for 8 months and am still paying on my physical therapy bill (and we have insurance). This prompted me to get very vocal about needing an appropriate access at this location.

I cannot urge you enough that there needs to be a safer access on this section of river. It is so beautiful and so popular that people (many people) will continue to paddle it regardless, putting them at risk for injury without a good access. I kayak and stand up paddleboard this section and it is my all time favorite section out of all of the Dan and all of the many rivers I recreate and teach on. Tarheel Paddlers Association also partners with local paddlers for river clean ups and we need a year 'round, reliable put in to help keep the river clean.

Please seriously consider this section as a top priority for river access.

I have attached a couple of photos and if you want to go see it for yourself I would be glad to take you! It is unbelievably amazing and needs to be accessible.

Thank you for your time and considerations.

JoAndra (Jo) Proia [REDACTED]
Freelance Outdoor Writer
Author: Piedmont Lakes, A Practical Guide for Boating in the NC Piedmont
Outdoor Writer, Natural Triad Magazine
ACA Certified L2 Coastal, L2 River Kayak and L2 SUP Instructor and Outdoor Guide
L1 Yoga Instructor
Wilderness First Aid Certified
Cornell University Nature Education Professional Development
VP of Programming Get:Outdoors Paddlesports
Founder: Get:Outdoors Women on the Water (GO WOW)
Greensboro, NC
<https://shopgetoutdoors.com/pages/gowow>
www.facebook.com/GETOUTDOORSWOMENONTHEWATER
#gowomenonwater

Kayak and Gear Sales-Instruction-Trips-Boat Repair

The big question is whether you are going to be able to say a hearty YES to your adventure. - Joseph Campbell

4 attachments



dan river jo sup.jpg
319K



dan river.jpg
139K



natalie dan river.jpg
197K



89 access.jpg
124K



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River Access

Dan Rossi [REDACTED]
To: sara_ward@fws.gov

Fri, Aug 9, 2019 at 2:14 PM

Ms Ward:

As a member of the paddling community in Stokes County, I would hope and encourage that a safe and reasonable river access point be built where Hwy 89 and Lynchburg Rd come together. I regularly access the river below the bridge that crosses the river. It is a very steep drop from the road to the surface under the bridge and another steep drop from there to the river. While I have never been injured, I consider myself lucky because I have slipped and slid my way down and occasionally by the seat of my pants.

This section of the Dan River is important to me because of it's beauty, history and recreational significance. In addition, I am 70 years old and safety is important to these old bones.

Respectfully yours,
Dan Rossi

[REDACTED]
Best Regards,
Dan Rossi
[REDACTED]



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] River Access Stokes County

Dale Swanson [REDACTED]

Fri, Aug 9, 2019 at 4:24 PM

To: sara_ward@fws.gov

I left Stokes County almost 4 years ago. During the preceding 2 decades there I spent a lot of time playing and working on, around, and for the Dan River.

In 1989 the Dan River Canoe Trail was dedicated in a little ceremony at Moratock Park in Danbury. At that time the system of public, county-maintained, river accesses included Whitt's Store access at the Hwy 89 bridge north of Danbury at Lynchburg Rd. River accesses began closing in the decade after Stokes County closed its Parks & Rec department and Randy stopped personally patrolling and maintaining the sites. The sheriff department did not have capacity to patrol the accesses either. And so property owners reluctantly, one by one, in the face of lawlessness, withdrew the access permission that had been leased to the County.

I did some advocacy and coordinating work around 2009-2012 to reopen one and prevent closure of 2 others. I tried working with the owner of Whitt's but could never get something worked out. That is definitely the ideal location for an access near the Big Creek confluence. It's time that the Dan River Company's monopoly on safe river access for the Hanging Rock State Park section of the Dan be broken and more State Park visitors enjoy the river with the option of running their own shuttle.

Please reach out to the current owner of the site formerly known as Whitt's Store. Be sure to leverage local residents. Talk with Steve Shelton who was a member of the group that put together the original system in the 80s. He can guide you in understanding the history and family dynamics. And the Hanging Rock state park superintendent of course.

Good luck!!!

Dale Swanson



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Comment on NRDAR

Ward, Sara <sara_ward@fws.gov>

Fri, Aug 9, 2019 at 9:12 AM

To: Jenny Edwards [REDACTED]

Cc: Susan Lingenfelter <susan_lingenfelter@fws.gov>, "McRae, Brian J" <brian.mcrae@ncwildlife.org>

Hi, Jenny.

Just send all suggestions to my email (and feel free to let others know, too). If you have a chance, I'd be interested in hearing your thoughts on the history of Drapers landing and whether there is interest support for expanded facilities there. The trustees have been working with Duke to try and secure a site between eden and Danville for improved access, but it has been hampered by site constraints and landowner willingness.

Great seeing you Wednesday, too. Very exciting news about the landowner agreements near Lindsey Bridge!! Way to go!

Sara

Sara E. Ward
U.S. Fish and Wildlife Service
100 Conservation Way / P.O. Box 1969
Manteo, NC 27954
(252) 473-1132 ext. 243
sara_ward@fws.gov

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[Quoted text hidden]

Please put the access for the Dan river at 89/Lynchburg/big creek an access to prevent injuries to boaters



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL]

[REDACTED]
To: sara_ward@fws.gov

Fri, Aug 9, 2019 at 12:16 PM

 **text_0.txt**
1K



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River access

to: sara_ward@fws.gov

Sat, Aug 10, 2019 at 1:49 PM

I understand that public input is being sought regarding access points for the Dan River. I have enjoyed getting to know the Dan! What a beautiful and historically valuable gem it is. I've used several access points to get to the Dan and by far the one at Rt 89/Lynchburg/Big Creek is in the most need of improvement. It's down right dangerous to use. Hopefully something can be done in the near future so we River lovers no longer have to risk injury. I would add that most of the kayakers I associate with are also staunch stewards of this river. Our desire for a safe access area is not merely for recreational purposes.

Thank you for your consideration of this feedback.

Randy DiCello



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan river access

judy Milakovich [REDACTED]

Sat, Aug 10, 2019 at 1:35 PM

To: "sara_ward@fws.gov" <sara_ward@fws.gov>

Hello Sara, I am a member of Tarheel Paddlers and often paddle the Dan river. I most enjoy the 89/Hanging Rock section and would love for the access at the 89 Bridge and Big Creek road to be improved. It is very steep and somewhat dangerous. I know some people have fallen trying to get their boats to the water, and some have been hurt trying to do so. I love to paddle this section and I am 75 years old which can make it a bit of a challenge to get my boat to the river at this put-in. Please consider this access a priority as it is very popular. One cannot access the river here any other way except if you are a paying customer of the Dan River Co. and their hours can be somewhat restricted plus I wouldn't consider this to be public access. Thank you very much for considering my input.

Judy Milakovich, Ph.D. Psychologist & Life Coach Phone [REDACTED]



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan river put in

Laura Phillips [REDACTED]

Sat, Aug 10, 2019 at 4:53 PM

To: "sara_ward@fws.gov" <sara_ward@fws.gov>

Hello Sara,

The current put in we use when the local outfitter is closed (they are only open a very limited certain months of the year and only certain times of day), is under the 89 bridge.

I cannot urge you enough that there needs to be a safer access on this section of river. It is so beautiful and so popular that people (many people) will continue to paddle it regardless, putting them at risk for injury without a good access. I kayak and stand up paddleboard this section and it is my all time favorite section out of all of the Dan and all of the many rivers I recreate and teach on. Tarheel Paddlers Association also partners with local paddlers for river clean ups and we need a year 'round, reliable put in to help keep the river clean.

Please seriously consider this section as a top priority for river access.

I have attached a couple of photos and if you want to go see it for yourself I would be glad to take you!
It is unbelievably amazing and needs to be accessible.

Thank you for your time and considerations.

Laura Phillips

--

Have a Blessed day, Laura



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River - Hwy 89 River Access

Will Seeley [REDACTED]

Sat, Aug 10, 2019 at 2:08 PM

To: sara_ward@fws.gov

Hi Sara,

I ask that you please consider adding public access to the Dan River at the intersection of highway 89 and Lynchburg Road where Big Creek feeds into the Dan River.

The current "put-in" is under the 89 bridge. I know of several paddlers who have hurt themselves launching boats here, sprained ankles, knees, wrists, as well as abrasions from slipping or from falling while launching kayaks or paddleboards. Parking is problematic and can become an issue at times of high use.

I urge you to strongly consider adding safer access to this section of the river. It is a fun, beautiful, and popular section that many people will continue to paddle there regardless, putting themselves at risk of injury. I both kayak and paddleboard this section as well as other sections on the Dan, but this one is great to take kids and beginners on.

If you have not paddled on this stretch of the river, I would be more than happy to take you, so you can see what a wonderful resource this, from both a historical and recreational perspective for the area.

Please consider this section as a top priority for river access.

Thanks for your time and consideration.

Will

William Seeley,
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Eden coal ash meeting info

Emily Davis [REDACTED]

Wed, Aug 14, 2019 at 10:37 AM

To: Sara_Ward@fws.gov

Hello, Ms. Ward,

My name is Emily Davis and I'm a reporter for NC Health News. I spoke with you at the meeting about the restorations along the Dan River in Eden. I'm wondering where I can access the resources that were provided at the meeting, as well as if the list of attendees is in the public record and accessible as well. This is mainly because I want to verify the spelling of the names of some of the attendees I spoke with.

Thank you,
Emily Davis
[REDACTED]



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River draft restoration plan

Megan Kimball <mkimball@selcnc.org>

Tue, Aug 20, 2019 at 12:57 PM

To: "Ward, Sara" <sara_ward@fws.gov>

Cc: Amy Horner <amy.hanley@sol.doi.gov>, Susan Lingenfelter <susan_lingenfelter@fws.gov>

Hi Sara,

Thank you very much for sharing this information. Just to confirm, are you saying that the linked report ([here](#)) is the only document that is responsive to my request from Aug. 7? Are there any other documents that contain the information I asked for?

I plan to also submit information requests for these documents, but I know that sometimes an informal request can be more efficient for everyone involved.

Thanks for your help,

Megan

Megan Kimball**Associate Attorney | Southern Environmental Law Center**[601 West Rosemary Street, Suite 220 | Chapel Hill, NC 27516-2356](#)

T: 919-967-1450

F: 919-929-9421

E: mkimball@selcnc.org<http://www.southernenvironment.org>**PRIVILEGE AND CONFIDENTIALITY NOTICE**

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Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River draft restoration plan

Ward, Sara <sara_ward@fws.gov>

Tue, Aug 20, 2019 at 11:38 AM

To: Megan Kimball <mkimball@selcnc.org>

Cc: Amy Horner <amy.hanley@sol.doi.gov>, Susan Lingenfelter <susan_lingenfelter@fws.gov>

Good morning, Megan.

Thanks for your interest in the Dan River Natural Resource Damage Assessment and Restoration. I understand you've already spoken with Amy Horner Hanley last week (I apologize for not responding sooner as I was out of the office on leave).

The report with data the trustees relied upon (as well as other sources identified in the Damage Assessment Plan) we discussed at the information session is now linked on the webpage for the Dan River Coal Ash Spill NRDAR. The presentation and posters from those meetings have also been added for reference.

Please direct any comments on the Draft Restoration Plan / Environmental Assessment to me or Susan Lingenfelter (copied here).

Take care, Sara

Sara E. Ward
U.S. Fish and Wildlife Service
100 Conservation Way / P.O. Box 1969
Manteo, NC 27954
(252) 473-1132 ext. 243
sara_ward@fws.gov

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[Quoted text hidden]



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Dan River restoration meeting

gary purgason [REDACTED]

Fri, Aug 23, 2019 at 5:49 PM

To: sara_ward@fws.gov

Hi, I talked with you at the meeting in Eden about stripped bass stocking in the Dan River. Just checking to see if you found anyone that can help with fish restoration, thanks

Sent from my iPad



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Public comment on Dan River consent decree and draft restoration plan

Megan Kimball <mkimball@selcnc.org>

Mon, Sep 9, 2019 at 4:46 PM

To: "anita_engle@ncmd.uscourts.gov" <anita_engle@ncmd.uscourts.gov>, "Ward, Sara" <sara_ward@fws.gov>, Susan Lingenfelser <susan_lingenfelser@fws.gov>

Dear Chief Judge Schroeder, Ms. Ward, and Ms. Lingenfelser,

I respectfully submit the attached comments regarding the Dan River coal ash spill consent decree and restoration plan, filed with the Court on July 18, 2019 in *United States v. Duke Energy Carolinas*, 1:19-cv-00707 (M.D.N.C.). These comments are submitted on behalf of the Dan River Basin Association, Dan Riverkeeper, Good Stewards of Rockingham, Roanoke River Basin Association, Stokes County Branch of the NAACP, and ourselves, the Southern Environmental Law Center. Please let me know if you have any questions or I can provide additional information.

Thank you.

Megan Kimball**Associate Attorney | Southern Environmental Law Center**[601 West Rosemary Street, Suite 220 | Chapel Hill, NC 27516-2356](#)

T: 919-967-1450

F: 919-929-9421

E: mkimball@selcnc.org<http://www.southernenvironment.org>**PRIVILEGE AND CONFIDENTIALITY NOTICE**

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**2019-09-09 NRDAR Comments Dan River Restoration Plan.pdf**

8080K

Public Informational Meeting • August 6, 2019 • Danville, VA

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 6, 2019 • Danville, VA

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 6, 2019 • Danville, VA

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

Name	Organization	Email Address	Add to email list (Y/N)
Nelson Hairston	Citizen	N/A	
Jerry Kellam	Citizen	NA	
Valerie Kellam	Citizen	N/A	
Davis Montgomery	Duke Energy		1
Jamie Wilkerson	Citizen		
Linda D. Hickok	Duke Energy		
Malcolm Allen	Eden NAACP		
Ann Clark	Citizen		
GAYLE TOUCH	CITIZEN		
Phil Hunsicker	CITIZEN		
Kathy Noble	Sierra Club	N/A	
DAVID HAIRSTON	APP Voice	N/A	N/A
Philipp White	CITIZEN		
Greg Ferguson	GSR	N/A	
Brooks Miller	GSR		
John Wall	GSR		
Wayne Kirkpatrick	DRBA		



Ward, Sara <sara_ward@fws.gov>

[EXTERNAL] Eden coal ash meeting info

Ward, Sara <sara_ward@fws.gov>

Tue, Sep 17, 2019 at 12:03 PM

To: Emily Davis [REDACTED]

Cc: Susan Lingenfelter <susan_lingenfelter@fws.gov>

Hi, Emily.

I'm so sorry for the delayed response (I inadvertently misfiled your message in my gmail).

The presentations and posters have been uploaded to our case website at https://www.cerc.usgs.gov/orca_docs/CaseDetails?ID=984

Meeting sign in sheets are attached per your request.

Thanks for your interest in the Dan River NRDAR. Please contact me if you have further questions. - Sara

Sara E. Ward

U.S. Fish and Wildlife Service

100 Conservation Way / P.O. Box 1969

Manteo, NC 27954

(252) 473-1132 ext. 243

sara_ward@fws.gov

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**Dan River Meeting Sign Ins.pdf**

467K

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 6, 2019 • Danville, VA

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 6, 2019 • Danville, VA

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 6, 2019 • Danville, VA

Name	Organization	Email Address	Add to email list (Y/N)
Bill SGIZINIA	City of Danville		
Angela Lawson			
Morris Lawson			

105

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

[illegible]

Dan River Coal Ash Spill Draft Restoration Plan/Environmental Assessment

Public Informational Meeting • August 7, 2019 • Eden, NC

Name	Organization	Email Address	Add to email list (Y/N)
Nelson Hairston	Citizen	N/A	
Jerry Kellam	Citizen	NA	
Valerie Kellam	Citizen	N/A	
Davis Montgomery	Duke Energy		1
Jamie Wilkerson	Citizen		
Linda D. Hickok	Duke Energy		
Malcolm Allen	Eden NAACP		
Ann Clark	Citizen		
GAYLE TOUCH	CITIZEN		
Phil Hunsicker	CITIZEN		
Kathy Noble	Sierra Club	N/A	
DAVID HAIRSTON	APP Voice	N/A	N/A
Philipp White	CITIZEN		
Chris Ferguson	GSR	N/A	
Brooks Miller	GSR		
John Wall	GSR		
Wayne Kirkpatrick	DRBA		

Comment Card: Draft Restoration Plan and Environmental Assessment



Please check if appropriate: ☐ Elected Official ☐ Government Agency Representative
☐ Organization ☐ Business ☒ Individual

Would you like to be added to the project mailing list for future information regarding this project?

☒ Yes ☐ No

Name:

Caroline Armijo

Organization Representing (if any):

The Lilies Project

Mailing Address:

Street Address:

City

State

Zip Code

Email Address:

Please Note: Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. The Draft Restoration Plan and Environmental Assessment can be accessed at https://www.cerc.usgs.gov/orda_docs/DocHandler.ashx?task=get&ID=5538. Comments and agency responses will be available for public review in the Final Restoration Plan. You may also submit comments before September 9, 2019 to Sara_Ward@fws.gov or Susan_Lingenfelter@fws.gov.

Comment:

I would love to see a public access in Pine Hall above Belew's Creek discharge.

Great to include access to Hearston Plantation & Graveyard for cultural center where the Sauratown Indian was found & protect the site.

Comment Card: Draft Restoration Plan and Environmental Assessment



Please check if appropriate: ☐ Elected Official ☐ Government Agency Representative
☒ Organization ☐ Business ☐ Individual

Would you like to be added to the project mailing list for future information regarding this project?

☐ Yes ☐ No

Name: Malcolm Allen

Organization Representing (if any): Eden NAACP

Mailing Address:

[Redacted]

Street Address

[Redacted]

City

State

Zip Code

Email Address: _____

Please Note: Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. The Draft Restoration Plan and Environmental Assessment can be accessed at https://www.cerc.usgs.gov/orda_docs/DocHandler.ashx?task=get&ID=5538. Comments and agency responses will be available for public review in the Final Restoration Plan. You may also submit comments before September 9, 2019 to Sara_Ward@fws.gov or Susan_Lingenfelser@fws.gov.

Comment: What has been done or being planned for the community closest to the spill (Draper). Seems as though those closest to the cleanup and in the mist of its environment benefit the least and these are those who property has devaluated the most.

Malcolm Allen

Comment Card: Draft Restoration Plan and Environmental Assessment



Please check if appropriate: ☐ Elected Official ☐ Government Agency Representative
☐ Organization ☐ Business ☒ Individual

Would you like to be added to the project mailing list for future information regarding this project?

☒ Yes ☒ No

Name: Lee Templeton

Organization Representing (if any): Citizen

Mailing Address: [Redacted]
Street Address
[Redacted]
City State Zip Code

Email Address: [Redacted]

Please Note: Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. The Draft Restoration Plan and Environmental Assessment can be accessed at https://www.cerc.usgs.gov/orda_docs/DocHandler.ashx?task=get&ID=5538. Comments and agency responses will be available for public review in the Final Restoration Plan. You may also submit comments before September 9, 2019 to Sara_Ward@fws.gov or Susan_Lingenfelter@fws.gov.

Comment: Please add an access point in Stokes
County, NC up from Flichum Rd.

The 4 projects look to be ones that have already &
will greatly benefit our section of NC and VA.

Comment Card: Draft Restoration Plan and Environmental Assessment



Please check if appropriate: ☐ Elected Official ☐ Government Agency Representative
☐ Organization ☐ Business ☒ Individual

Would you like to be added to the project mailing list for future information regarding this project?

☒ Yes ☐ No

Name: Jenny Edwards

Organization Representing (if any): _____

Mailing Address: _____

Street Address

City

State

Zip Code

Email Address: _____

Please Note: Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. The Draft Restoration Plan and Environmental Assessment can be accessed at https://www.cerc.usgs.gov/orda_docs/DocHandler.ashx?task=get&ID=5538. Comments and agency responses will be available for public review in the Final Restoration Plan. You may also submit comments before September 9, 2019 to Sara_Ward@fws.gov or Susan_Lingenfelter@fws.gov.

Comment: Recommend a public boat river access on the

Dan River upstream from the Flinchum Rd Access
at Hanging Rock Park

APPENDIX E. Trustee Responses to Public Comments on the Draft Restoration Plan and Environmental Assessment

The Dan River Coal Ash Spill Trustees received 21 written comments from the public on the Draft Restoration Plan/Environmental Assessment (Draft RP/EA). This section summarizes those public comments and provides the Trustees' responses to those comments. The public comment period began July 26, 2019 and ended on September 9, 2019 after 45 days. The Trustees held two public information meetings on the Draft RP/EA: one in Danville, VA, on August 6, 2019 and the other in Eden, NC on August 7, 2019. Over 42 people attended the public meetings (from sign-in sheets). The meetings were structured to:

- 1) Present an overview of the Draft RP/EA; and
- 2) Allow attendees to interact with the representatives from the U.S. Fish and Wildlife Service, the Commonwealth of Virginia, and the State of North Carolina during two 2-hour open house sessions, with posters describing each of the proposed restoration categories.

Our goal in using this format was to allow maximum interaction time between the public and the Trustees, and to allow those with very specific interests to focus on that particular poster or topic. The Trustees received comments from various individuals, citizen groups and non-profit agencies, and one state agency. Table E-1, below, lists those who commented, a summary of their comments, and the Trustees' response.

Table E-1. List of those who provided written comments on the Dan River Coal Ash Spill Draft RP/EA

<i>Citizens</i>
Lee Templeton
William Seeley
Laura Phillips
Randy DiCello
Dale Swanson
Dan Rossi
John Lea
Eric Juday
Tammy Fletcher
Lucas Conkle
Lc Coonse
Gary Purgason
JoAndra (Jo) Proia
text received - no name associated
<i>State and federal representatives and agencies</i>
Virginia Department of Environmental Quality
<i>Organizations, associations, and nonprofit entities</i>
Dan River Basin Association (Jenny Edwards)
Tarheel Paddlers (Judy Milakovich, Ph.D.)
The Lilies Project (Caroline Armijo)
National Association for the Advancement of Colored People (Malcolm Allen)
Southern Environmental Law Center (Megan Kimball)

Table E-2. Summary of comments received and Trustees' Response

Date Received	From (NAME)	Affiliation	Comment Summary	Response for the record
Comments related to Alternative 5 (Establishment of Public Boat Launch Facilities on the Dan River)				
8/5/2019	Janine Turner	DEQ	The overwhelming response from the public on boat ramp recommendations was access in Stokes County at the 89/268 Lynchburg Road/ Big Creek intersection.	The Trustees, in collaboration with Duke Energy and technical advisors with the NC Wildlife Resources Commission and the VA Department of Game and Inland Fisheries reviewed the Dan River and its tributaries to consider existing access locations and assessed the feasibility of facility development at sites suggested to the Trustees throughout the restoration scoping and planning process. Efforts to secure expanded facilities and/or access at the Stokes County site referenced in the Comment Summary have not been successful to date.
8/7/2019	Malcolm Allen	NAACP		
8/7/2019	Caroline Armijo	The Lilies Project		
8/7/2019	Lee Templeton	Citizen	One commenter recommended an access location at Draper, NC, which is the closest area to the spill release.	
8/7/2019	Jenny Edwards	Citizen		
8/9/2019	Dale Swanson	Citizen		
8/9/2019	Dan Rossi	Citizen	Another commenter recommended an access location at NC 89/Lynchburg road as a priority and also suggested an access location somewhere between mile 100 and 101 of Dan River and access near mile 60 of the Smith River.	As noted in this Final RP/EA, the Trustees continue to seek another access location and will review and consider additional access points, including those identified during the Draft RP/EA review to determine potential feasibility, suitability for public use, and willingness of existing landowners to permit access.
8/9/2019	Jo Andra Proia	Get Outdoors		
8/9/2019	John Lea	Citizen		
8/9/2019	Eric Juday	Citizen	Another commenter recommended an access location at Pine Hall above Belews Creek discharge.	Proposed boat launch sites reviewed by the trustees in Virginia were listed in the restoration scoping responsiveness summary released by the Trustees in December 2014.
8/9/2019	Tammella Fletcher	Citizen		
8/9/2019	Lucas Conkle	Citizen		
8/9/2019	Text message No name	Citizen	One commenter requested GIS shapefiles or the latitude/longitude of possible boat launch sites in Virginia in order to aid their review.	
8/10/2019	Randy DiCello	Citizen		
8/10/2019	Laura Phillips	Citizen		
8/10/2019	Judy Milakovich, Ph.D.	Tarheel Paddlers		
8/10/2019	Text message No name	Citizen		
8/10/2019	William Seeley	Get Outdoors		
Comments related to the Draft RP/EA				

Table E-2. Summary of comments received and Trustees' Response

Date Received	From (NAME)	Affiliation	Comment Summary	Response for the record
8/7/2019 9/9/2019	Megan Kimball	SELC (on behalf of the Dan River Basin Association, Dan Riverkeeper, Good Stewards of Rockingham, Roanoke River Basin Association, Stokes County Branch of the NAACP)	<p>Generally supported the types of projects, but concerned about an inability to determine whether the proposed projects adequately compensate the public.</p> <p>Trustees failed to adequately consider alternatives, solicit public comment, perform NEPA review, and plan for operations and maintenance.</p> <p>Commenter requested materials needed to review the Trustees' damages determination and the Trustees' evaluation of the suitability of restoration alternatives to offset injuries to natural resources and services resulting from the spill.</p>	<p>The report with data the Trustees relied upon (as well as other sources identified in the Damage Assessment Plan) and discussed at the information sessions is now linked on the webpage for the Dan River Coal Ash Spill NRDAR. The presentation and posters from those meetings have also been added for reference.</p> <p>A more in depth response to this Commenter's input follows after the table.</p>
Comments unrelated to the NRDAR process				
8/3/2019	Lc Coonse	Citizen	The CSI superfund site in Caldwell County remediation plan is still in the " test and observe " stage----after 31 years. The problem with all our environmental woes is that political solutions are being substituted for scientific solutions.	Comment does not appear to be relevant to the NRDAR process
8/2/2019	Lc Coonse	Citizen	Expressed concern with the Dan River contamination and coal ash in general and that the compound is so harmful and the government is ignoring it. Also expressed concern that 2378 tetrachlorodibenzodioxin also known as TCDD is in coal ash and is mutagenic.	Comment does not appear to be relevant to the NRDAR process

Public Comment: The CERCLA NRDAR regulations and related FWS NRDAR policy require the development of a Restoration Compensation and Determination Plan [RCDP] and Report of Assessment.

Trustee Response: The process described by the CERCLA NRDAR regulations is optional: “The assessment procedures set forth in this part are not mandatory. However, they must be used by Federal or State natural resource trustees in order to obtain the rebuttable presumption contained in section 107(f)(2)(c) of CERCLA.” 43 C.F.R. § 11.10. The FWS NRDAR policy, 573 FW 3, translates the statutory and regulatory natural resource trustee authority for agency employees in addition to describing the internal procedures for initiating and resolving a natural resource damage assessment and restoration (NRDAR). The FWS policy, therefore, is fundamentally based on the authority provided by CERCLA and its implementing regulations; the Policy does not create procedural requirements that are not required by law. In this case, the parties were able to reach a settlement agreement prior to preparation of an RCDP and/or Report of Assessment. The settlement is consistent with CERCLA’s strong public policy favoring settlements. *B. F. Goodrich v. Betkoski*, 99 F.3d 505, 527 (2d Cir. 1996) (unrelated portions overruled by *United States v. Bestfoods*, 524 U.S. 51 (1998)).

Further, costs of assessment are to be “reasonable”. Reasonable costs that may be recovered for the cost of performing a damage assessment include “...the anticipated increment of extra benefit in terms of the precision or accuracy of estimates obtained by using a more costly injury, quantification, or damage determination methodology are greater than the anticipated increment of extra costs of that methodology.” 43 C.F.R. § 11.14(ee). Costs incurred to develop an RCDP and Report of Assessment after reaching an agreement in principle with the potentially responsible party may not be reasonable: increasing assessment costs without any extra benefit for restoration of natural resources and services. *See also* 43 C.F.R. § 11.11 (“the purpose of this part is to provide...cost-effective procedures for assessing natural resource damages”); 43 C.F.R. § 11.13 (“...uses a...phased approach to the assessment of natural resource damages. This approach is designed to ensure that all procedures used in an assessment...are appropriate, necessary, and sufficient”]; 43 C.F.R. § 11.15(a)(3) (a Trustee may recover “the reasonable and necessary costs of the assessment”).

Public Comment: The Trustees did not follow the process discussed in the Funding and Participation Agreement between NC, VA, US Department of the Interior and Duke Energy.

Trustee Response: One commenter indicated that the Trustees did not follow the process in the Funding and Participation Agreement (Section X). The Trustees acknowledge that the process in Section X.B did not occur in its entirety, namely that a draft restoration plan was not developed prior to implementation of projects that the Trustees are now identifying as selected alternatives. Instead, Duke Energy undertook those early restoration projects based on public feedback from the 2014 Public Scoping process, at their own risk, and delivered natural resource benefits and

recreational opportunities to the public prior to reaching a proposed legal settlement. However, other aspects of the FPA process in Section X.B were followed: public review and comment on a draft restoration plan that identifies preferred alternatives occurred from July 26, 2019 – September 9, 2019. The Trustees are adopting (selecting) the preferred alternatives through this Final Restoration Plan and Environmental Assessment (April, 2020). Lastly, the FPA is intended to govern the relationship between the Trustees and Duke Energy in conducting a cooperative assessment and restoration planning process. In this fluid process, sometimes the process changes or does not occur as initially envisioned as realities of limited resources and appropriate restoration opportunities become known. The parties to the agreement were able to achieve the stated purpose of the FPA “an expedited, focused framework for cooperative NRDAR to facilitate resolution of any claims for NRD” and the mutual goal of “expedited restoration delivery” while still providing opportunity for public involvement. Further, the FPA does not create any rights or causes of action enforceable by third persons not a party to the Agreement. Section XV.B.

Public Comment: The Trustees should provide additional information concerning injury quantification and restoration scaling to support the preferred restoration alternatives in the restoration plan.

Trustee Response: The Trustees have revised Section 2.0 “SUMMARY OF INJURY TO NATURAL RESOURCES, RESTORATION SCALING AND DAMAGES DETERMINATION” to clarify the analyses to quantify losses to aquatic and human use services as a result of the Spill and the benefits of restoration projects they relied upon to propose, and now select, the restoration alternatives in this Final RP/EA.

Public Comment: There has been no meaningful opportunity for the public to comment on restoration alternatives.

Trustee Response: The Dan River Natural Resource Trustee Council 2014 Scoping process provided an early opportunity for public involvement in restoration planning by inviting the public to identify potential opportunities for restoration projects that would restore lost resources and services as a result of the Spill. The public provided nearly 60 discrete project ideas; all of the 4 selected restoration alternatives were identified through the Scoping Process. The CERCLA NRDAR regulations do not discuss a “scoping process”; rather this was an additional step that the Trustees undertook to involve the public early in restoration planning. The CERCLA NRDAR regulations are not mandatory, allowing the Trustees flexibility to follow a process to ensure public participation and cost-effective, timely resolution of potential legal claims, in addition to quickly restoring lost resources and services. Additionally, there was a 45 day public comment period for the Draft Restoration Plan and Environmental Assessment in 2019, wherein the Trustees described restoration alternatives and identified several as “preferred.” The Trustees received 21 comments on the DRAFT RP/EA, which are summarized herein along with corresponding responses from the Trustees. *[Trustees note that no commenter*

was concerned about the addition of the Scoping Process into the assessment process even though it is not described in CERCLA NRDAR regulations.]

Public Comment: The Trustees did not recover enough funding for long term operations and maintenance of the restoration projects.

Trustee Response: CERCLA NRDAR is not a punitive statute; it is meant to restore the resources and services that were injured or lost as a result of exposure to hazardous substances but does allow for recovery of the costs of the restoration, including indirect costs that support the selected alternative. See generally, 43 C.F.R. § 11.83(b). The Trustees are not responsible for the long term operation and maintenance of the Pigg River Dam, the Abreu Grogan Park, or the Mayo River State Parks. The selected Mayo River State Parks property acquisitions were transferred to the respective State agency, with its advanced knowledge and understanding that it would be responsible for the long term operations and maintenance of the property. The State agency is owed deference as to its own budgetary matters. Importantly, the environmental uplift from the State Parks property acquisitions, avoiding increased sedimentation, loss of leaf litter, temperature changes, canopy loss, and nutrient cycling for the Mayo River, is still realized without any additional funds for operations and maintenance for these projects. Each Trustee recovered some restoration planning, implementation and monitoring costs to facilitate public review of the Draft Restoration Plan, response to comments, finalization of the Consent Decree and Restoration Plan/Environmental Assessment and ensure that the selected restoration alternatives are successfully implemented as envisioned.

Public Comment: The number of proposed restoration alternatives and their analysis is not sufficient.

Trustee Response: Under both CERCLA and NEPA, the Trustees need to retain and analyze a reasonable number of alternatives in a restoration plan. 43 C.F.R. §§11.81(a), 11.83(c) and (d), and 11.93 (CERCLA); 40 C.F.R. § 1502.14 (NEPA). The purpose of alternatives analysis “is to inform both the public and the decisionmaker,” by giving them clearly defined alternatives. *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195 (D.C.Cir.1991). Of course, only alternatives that are reasonable, or feasible, require discussion. *Id.* Whether an alternative is reasonable depends upon the goals of the agency's action. While “no minimum number of alternatives” must be considered, *Citizens for Smart Growth v. Sec'y Dept. of Transp.*, [669 F.3d 1203, 1212](#) (11th Cir.2012), agencies must present a reasoned alternatives analysis.” *Gulf Restoration Network v. Jewell*, 161 F. Supp. 3d 1119, 1130 (S.D. Ala. 2016)

Here the Trustees identified eight (8) proposed restoration alternatives, including the required No Action alternative. After evaluation, the Trustees proposed four (4) as “preferred” in the Draft RP/EA and have selected those four alternatives in the Final RP/EA. Of these preferred alternatives all four (4) were identified by the public through the 2014 Scoping process. Given the goal of the agency's action to restore, replace, rehabilitate and/or acquire the equivalent of

the natural resources and associated services injured or lost as a result of the Spill, the quantity of alternatives retained by the Trustees for a more detailed, reasoned analysis is reasonable.

A commenter suggested that the Trustees should have included and evaluated all project ideas (approximately 60) submitted through the 2014 Public Scoping process in the Restoration Plan and Environmental Analysis, including “a more robust evaluation of the rejected projects and consideration of other reasonable and feasible restoration alternatives, including the projects proposed by the public.” There is no requirement for the Trustees to do so. The Trustees did provide a public summary of the restoration project ideas submitted through the process. As stated earlier, all 4 of the selected restoration alternatives were identified by the public in the Scoping Process. Including a more robust evaluation of rejected projects submitted through the scoping process would not assist in achieving restoration—the goal of the NRDAR process, but rather would lead to increased costs of restoration without any incremental benefit (43 C.F.R. §11.14(ee) – describing what is a reasonable cost).

Public Comment: The Department of the Interior did not conduct adequate National Environmental Policy Act analysis.

Trustee Response: In the Draft RP/EA, a National Environmental Policy Act analysis was conducted on the proposed restoration alternatives that were not yet implemented. This analysis occurred before the Trustees adopted (or selected) any restoration alternatives, as the Trustees/DOI have selected the restoration alternatives upon issuance of this Final RP/EA. In general, NEPA requires a federal agency, contemplating a major Federal action that would have a significant affect on the quality of the human environment, to prepare an Environmental Impact Statement. When it is uncertain whether a contemplated action is likely to have significant environmental impacts, the federal agency prepares an environmental assessment (EA) to evaluate the need for an EIS. If the EA demonstrates that the proposed action will not significantly impact the quality of the human environment, the agency issues a Finding of No Significant Impact (FONSI), which satisfies the requirements of NEPA, and no EIS is required. The goal of NEPA is to make an informed decision prior to taking a major Federal action; therefore it would turn NEPA on its head to require a federal agency to analyze the environmental consequences of an already completed project. Here, except for the boat ramp project that is not yet complete, the agency action at issue is the official selection of restoration projects in order to resolve a potential natural resource damages claim (i.e., not a decision to fund/implement selected restoration projects); an action that is not “major” (40 CFR § 1508.18).

Duke Energy undertook the projects of Pigg River Dam removal, the Abreu Grogan Park improvements, and the majority of the Mayo River State Parks property acquisitions at their own risk as part of ‘early’ restoration. These early restoration actions are consistent with the purpose of CERCLA’s NRD provisions--to restore the resources to their baseline condition and provide for any interim losses of resource services. Here both the natural resources and the services they

provide, such as recreational services, benefitted from this early action undertaken by Duke Energy.

The Draft RP/EA evaluated impacts of a potential future boat ramp location within a limited area of the Dan River Basin nearby the spill area based on current potential locations under evaluation. However, once the locations are further determined, as appropriate, the DOI may supplement this environmental assessment should any additional, previously unknown information about the affected environment come to light that is substantially different from the description and analysis currently contained in the Final RP/EA.

**APPENDIX F. Approval of the Final Restoration Plan and Environmental Assessment for the
Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration**

Dan River Coal Ash Spill

Natural Resource Damage Assessment and Restoration

Final Restoration Plan/Environmental Assessment

In accordance with U.S. Department of the Interior (Department) policy regarding documentation for natural resource damage assessment and restoration projects (521 DM 3), the Authorized Official for the Department must demonstrate approval of draft and final Restoration Plans and their associated National Environmental Policy Act documentation, with concurrence from the Department's Office of the Solicitor.

The Authorized Official for the Dan River Coal Ash Spill is the Regional Director for the U.S. Fish and Wildlife Service's South Atlantic-Gulf and Mississippi-Basin.

By the signatures below, the Final Restoration Plan/Environmental Assessment (RP/EA) is hereby approved. The final RP/EA is being released after a 45-day public comment period on the Draft RP/EA. After consideration of the public comments received, the Trustee Council hereby issues this Final RP/EA.

Approved:

Concurred:

**LEOPOLDO
MIRANDA-CASTRO**

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MIRANDA-CASTRO
Date: 2020.04.20 14:28:22
-04'00'

Leopoldo Miranda
Regional Director
South Atlantic-Gulf & Mississippi-Basin
U.S. Fish and Wildlife Service

Date

AMY HORNER HANLEY Digitally signed by AMY HORNER HANLEY
Date: 2020.04.20 14:44:10 -04'00'

Amy Horner Hanley
Senior Attorney Advisor
Office of the Solicitor
Environmental Restoration Branch

APPENDIX G. Finding of No Significant Impact

FINDING OF NO SIGNIFICANT IMPACT

Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration

The U.S. Department of the Interior, the Commonwealth of Virginia, and the state of North Carolina, collectively the Trustees, have completed a final Restoration Plan and Environmental Assessment (RP/EA) that explains the decisions of the Trustees to implement conservation, restoration, and recreation enhancement activities within or near the spill-affected of the Dan River watershed. The RP/EA describes a restoration program that will restore, replace, and/or acquire the equivalent of the natural resources injured, destroyed, or lost as a result of contamination from the Dan River coal ash spill at the Duke Energy Dan River Steam Station in Eden, North Carolina. Planned activities for which the U.S. Fish and Wildlife Service conducted an environmental assessment include acquisition and conservation of Mayo River flood plain and riverbank habitat and establishment of public boat launch facilities along the Dan River.

The draft RP/EA was available for public review and comment from July 26, 2019 through September 9, 2019. A notice of the draft RP/EA availability was published the Federal Register and in local media outlets, and on August 6 and 7, 2019, the Trustees held public meetings to discuss the draft RP/EA, respond to questions from the public, and receive input on the preferred alternatives for restoration. The comments received and the Trustees' responses to comments are provided in Appendices D and E, respectively, of the Final RP/EA. In general, the comments supported the types of restoration projects that were identified by the Trustees. Some clarifications and additional information have been provided as a result of the comments; however, the Trustees did not change the types of restoration projects selected in the Final RP/EA.

Based on a review and evaluation of the information contained in the Final RP/EA, I have determined that the selected actions will not significantly affect the quality of the human environment within the meaning of Section 102 (2)(c) of the National Environmental Policy Act of 1969. Accordingly, the preparation of an environmental impact statement on the actions is not necessary.

LEOPOLDO

MIRANDA-CASTRO

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MIRANDA-CASTRO
Date: 2020.04.16 17:10:46 -04'00'

Regional Director/DOI Authorized Official

Date

UNITED STATES FISH & WILDLIFE
SERVICE

ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council of Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that the action of the final *Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration*:

___ is a categorical exclusion as provided by 516 DM 6 Appendix 1 and 516 DM 6, Appendix 1. No further documentation will therefore be made.

X is found not to have significant environmental effects as determined by the attached Environmental Assessment and Finding of No Significant Impact.

___ is found to have significant effects, and therefore further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

___ is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.

___ is an emergency action within the context of 40 CFR 1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents (list):

Restoration Plan and Environmental Assessment for the Dan River
Coal Ash Spill Natural Resource Damage Assessment and Restoration